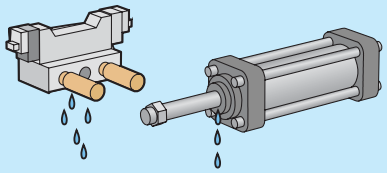
Refrigerated Air Dryers

Protect Pneumatic Equipment from Moisture!

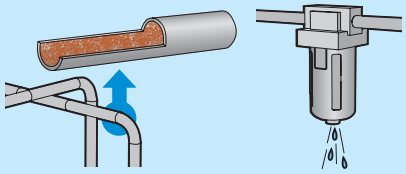
An air dryer removes the vapor from the moist compressed air delivered by the compressor, and prevents it from causing the pneumatic equipment to fail.

Effects of moisture on equipment

Malfunctioning of valves and actuators caused by dripping grease



Decomposition of auto drain caused by rusting inside pipes



Generation of water droplets

Air flow capacity — Increased by Up to **40** % (SMC comparison)

Power consumption — Reduced by Up to **40** % (SMC comparison)

Refrigerant

R134a (HFC)
R407C (HFC)

Zero ozone depletion potential

Improved corrosion resistance with the stainless steel heat exchanger
(IDF4E to 75E/IDU3E to 75E)

Standard temperature air inlet [*Series IDF*]

IDF1E, 2E, 3E, 4E, 6E, 8E, 11E, 15E1, 22E, 37E, 55E, 75E, 120D, 150D, 190D, 240D, 370B

High temperature air inlet [*Series IDU*]

IDU3E, 4E, 6E, 8E, 11E, 15E1, 22E, 37E, 55E, 75E

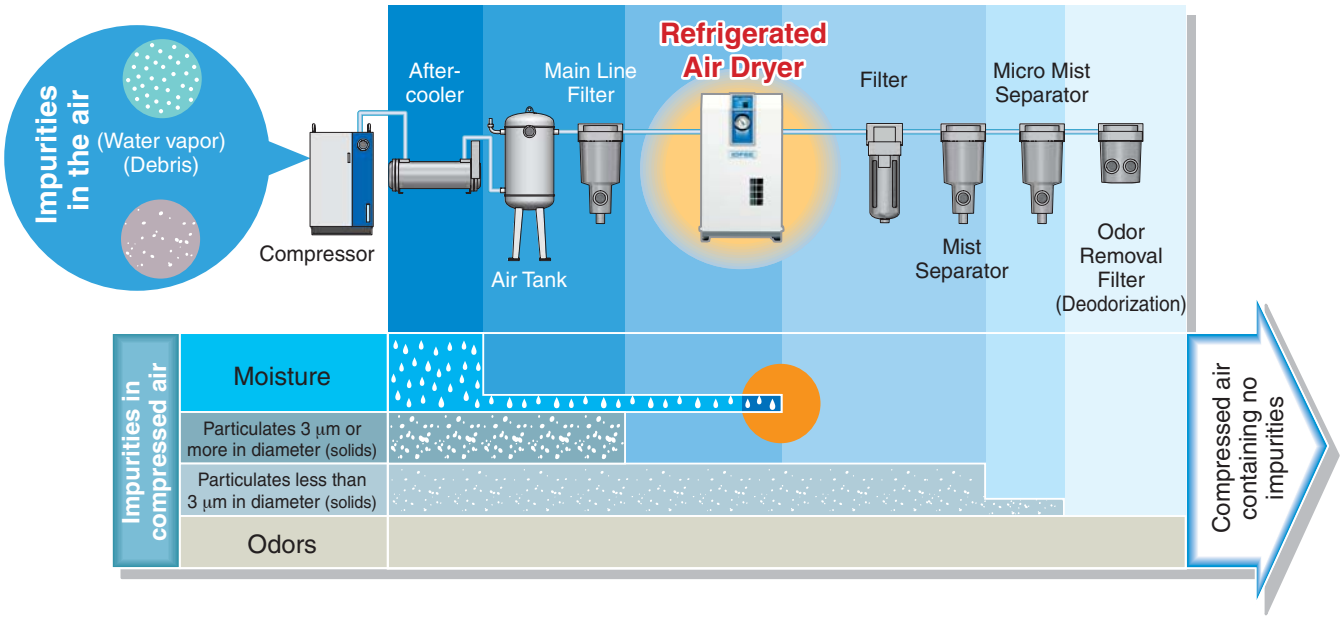
Series IDF/IDU

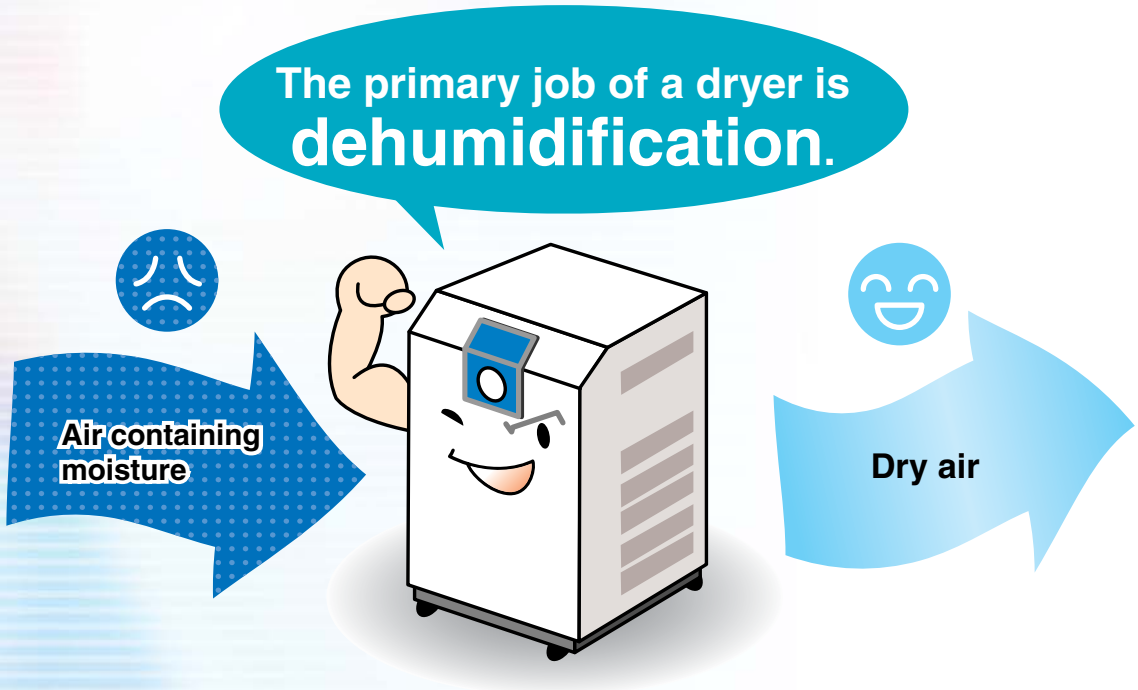
SMC

CAT.ES30-8F ⓐ

The Importance of Dryers

Compressed air contains moisture (water vapor, droplets), oil, debris and other foreign matter. Filters and mist separators can be used to remove droplets, oil, debris, and so on, but a dryer is necessary to remove water vapor.





SMC Air Preparation Equipment

Quick Reference Guide to Air Preparation Equipment

* Shows standard combinations. The suffix numbers of the model indicate port size, power supply, etc.
  Refer to “How to Order” on pages 5, 9, 12, 15 and 18 for details on dryers and refer to “SMC Best Pneumatics” for other equipment.
* The symbol “—” in the table indicates that no such equipment exists.
* The figures for air flow capacity corresponding to air compressor output are provided for reference only.
* The below table applies to the air pressure dew point 10°C (at 0.7 MPa). In cases where other dew points are needed, refer to pages 3 and 4 (Model Selection) in this catalog.

● For Reciprocating Compressors (Aftercooler inlet: 180°C or 70°C, Refrigerated air dryer inlet temperature: 35°C or 40°C, Membrane air dryer inlet temperature: 25°C)

Air compressor			Main line			Sub line			Local line					
Output (kW)	Air flow capacity (m³/min) Note 1)		Air tank	Aftercooler Note 2)		Main line filter	Refrigerated air dryer Note 3)		Mist separator	Micro mist separator with pre-filter	Micro mist separator	Membrane air dryer Note 5)	Super mist separator	Odor removal filter
	Suction condition (32°C)	ANR conversion (20°C)		Air-cooled	Water-cooled		50 Hz	60 Hz						
0.75	0.1	0.10	AT6C-04	HAA7-06	HAW2-04	AFF2C-02	IDF1E	IDF1E	AM150C-02	AMH150C-02	AMD150C-02	IDG10-02	AME150C-02	AMF150C-02
1.5	0.2	0.19	AT6C-04	HAA7-06	HAW2-04	AFF2C-02	IDF2E	IDF2E	AM150C-02	AMH150C-02	AMD150C-02	IDG20-02	AME150C-02	AMF150C-02
2.2	0.3	0.29	AT6C-04	HAA7-06	HAW2-04	AFF2C-02	IDF3E	IDF3E	AM150C-02	AMH250C-02	AMD250C-02	IDG30-02	AME250C-02	AMF250C-02
3.7	0.5	0.48	AT6C-04	HAA7-06	HAW7-06	AFF4C-03	IDF4E	IDF4E	AM250C-03	AMH250C-03	AMD250C-03	IDG50-03	AME250C-03	AMF250C-03
5.5	0.7	0.67	AT6C-04	HAA7-06	HAW7-06	AFF4C-03	IDF6E	IDF6E	AM250C-03	AMH350C-03	AMD350C-03	IDG75-04	AME350C-03	AMF350C-03
7.5	1.0	0.96	AT11C-06	HAA7-06	HAW7-06	AFF8C-04	IDF8E	IDF8E	AM350C-04	AMH350C-04	AMD350C-04	IDG100-04	AME350C-04	AMF350C-04
11	1.5	1.44	AT11C-06	HAA15-10	HAW22-14	AFF8C-04	IDF11E	IDF11E	AM350C-04	AMH450C-04	AMD450C-04	—	AME450C-04	AMF450C-04
15	2.0	1.92	AT22C-14	HAA15-10	HAW22-14	AFF11C-06	IDF15E1	IDF15E1	AM450C-06	AMH450C-06	AMD450C-06	—	AME450C-06	AMF450C-06
22	3.0	2.88	AT22C-14	HAA22-14	HAW37-14	AFF22C-10	IDF22E	IDF15E1	AM550C-10	AMH550C-10	AMD550C-10	—	AME550C-10	AMF550C-10
27	3.5	3.36	AT37C-14	HAA37-14	HAW37-14	AFF22C-10	IDF22E	IDF22E	AM550C-10	AMH550C-10	AMD550C-10	—	AME550C-10	AMF550C-10
37	5.0	4.8	AT37C-14	HAA37-14	HAW55-20	AFF37B-14	IDF37E	IDF37E	AM650-14	AMH650-14	AMD650-14	—	AME650-14	AMF650-14
55	7.5	7.2	AT55C-20	—	HAW75-20	AFF75$\frac{A}{B}$-20	IDF55E	IDF55E	AM850-20	AMH850-20	AMD850-20	—	AME850-20	AMF850-20
75	10.0	9.6	AT75C-20	—	HAW110-30	AFF75$\frac{A}{B}$-20	IDF75E	IDF75E	AM850-20	AMH850-20	AMD850-20	—	AME850-20	AMF850-20
110	15.0	14.4	AT125C-30	—	—	AFF125A-30	IDF120D	IDF120D	—	—	AMD910-30	—	—	AMF910-30
150	20.0	19.2	AT150C-40	—	—	AFF125A-30	IDF120D	IDF120D	—	—	AMD910-30	—	—	AMF910-30
220	30.0	28.8	AT220C-40	—	—	AFF220A-40	IDF190D	IDF150D	—	—	AMD1010-40	—	—	AMF1000-40

● For Screw Compressors (When an aftercooler is installed, Refrigerated air dryer inlet temperature: 35°C or 40°C, Membrane air dryer inlet temperature: 25°C)

Air compressor			Main line		Sub line		Local line						
Output (kW)	Air flow capacity (m³/min) Note 1)		Aftercooler Note 2)		Refrigerated air dryer Note 3)		Mist separator	Micro mist separator with pre-filter	Micro mist separator	Membrane air dryer Note 5)	Super mist separator	Odor removal filter
	Suction condition (32°C)	ANR conversion (20°C)	Air-cooled	Water-cooled	50 Hz	60 Hz						
1.5	0.16	0.15	HAA7-06	HAW2-04	IDF2E	IDF2E	AM150C-02	AMH150C-02	AMD150C-02	IDG20-02	AME150C-02	AMF150C-02
2.2	0.245	0.24	HAA7-06	HAW2-04	IDF3E	IDF3E	AM150C-02	AMH250C-03	AMD250C-03	IDG30-02	AME250C-03	AMF250C-03
3.7	0.44	0.42	HAA7-06	HAW7-06	IDF4E	IDF4E	AM250C-03	AMH250C-03	AMD250C-03	IDG50-03	AME250C-03	AMF250C-03
5.5	0.72	0.69	HAA7-06	HAW7-06	IDF6E	IDF6E	AM250C-03	AMH350C-04	AMD350C-04	IDG75-04	AME350C-04	AMF350C-04
7.5	1.2	1.15	HAA15-10	HAW22-14	IDF8E	IDF8E	AM350C-04	AMH450C-06	AMD450C-06	—	AME450C-06	AMF450C-06
11	1.8	1.7	HAA15-10	HAW22-14	IDF15E1	IDF11E	AM450C-06	AMH450C-06	AMD450C-06	—	AME450C-06	AMF450C-06
15	2.6	2.5	HAA15-10	HAW22-14	IDF15E1	IDF15E1	AM550C-10	AMH550C-10	AMD550C-10	—	AME550C-10	AMF550C-10
22	4	3.8	HAA37-14	HAW37-14	IDF22E	IDF22E	AM650-14	AMH650-14	AMD650-14	—	AME650-14	AMF650-14
37	6.6	6.3	—	HAW55-20	IDF55E	IDF37E	AM850-20	AMH850-20	AMD850-20	—	AME850-20	AMF850-20
55	9.5	9.1	—	HAW75-20	IDF75E	IDF55E	AM850-20	AMH850-20	AMD850-20	—	AME850-20	AMF850-20
75	13	12.5	—	HAW110-30	IDF120D	IDF75E	—	—	AMD910-30	—	—	AMF900-30
110	19	18.3	—	—	IDF120D	IDF120D	—	—	AMD910-30	—	—	AMF900-30
150	28.5	27.4	—	—	IDF190D	IDF150D	—	—	AMD1010-40	—	—	AMF1000-40
220	45	43.2	—	—	IDF240D	IDF240D	—	—	—	—	—	—

● For Screw Compressors (When an aftercooler is not installed, Refrigerated air dryer inlet temperature: ambient temperature +15°C, Membrane air dryer inlet temperature: 25°C)

Air compressor			Sub line		Local line						
Output (kW)	Air flow capacity (m³/min) Note 1)		Air-cooled aftercooler integrated type refrigerated air dryer Note 4)		Mist separator	Micro mist separator with pre-filter	Micro mist separator	Membrane air dryer Note 5)	Super mist separator	Odor removal filter
	Suction condition (32°C)	ANR conversion (20°C)	50 Hz	60 Hz						
1.5	0.16	0.15	IDU3E	IDU3E	AM150C-02	AMH150C-02	AMD150C-02	IDG20-02	AME150C-02	AMF150C-02
2.2	0.245	0.24	IDU3E	IDU3E	AM150C-02	AMH250C-03	AMD250C-03	IDG30-02	AME250C-03	AMF250C-03
3.7	0.44	0.42	IDU4E	IDU4E	AM250C-03	AMH250C-03	AMD250C-03	IDG50-03	AME250C-03	AMF250C-03
5.5	0.72	0.69	IDU6E	IDU6E	AM250C-03	AMH350C-04	AMD350C-04	IDG75-04	AME350C-04	AMF350C-04
7.5	1.2	1.15	IDU8E	IDU8E	AM350C-04	AMH450C-06	AMD450C-06	—	AME450C-06	AMF450C-06
11	1.8	1.7	IDU15E1	IDU11E	AM450C-06	AMH450C-06	AMD450C-06	—	AME450C-06	AMF450C-06
15	2.6	2.5	IDU15E1	IDU15E1	AM550C-10	AMH550C-10	AMD550C-10	—	AME550C-10	AMF550C-10
22	4	3.8	IDU22E	IDU22E	AM650-14	AMH650-14	AMD650-14	—	AME650-14	AMF650-14
37	6.6	6.3	IDU55E	IDU37E	AM850-20	AMH850-20	AMD850-20	—	AME850-20	AMF850-20
55	9.5	9.1	IDU75E	IDU55E	AM850-20	AMH850-20	AMD850-20	—	AME850-20	AMF850-20
75	13	12.5	—	IDU75E	—	—	AMD910-30	—	—	AMF900-30
110	19	18.3	—	—	—	—	AMD910-30	—	—	AMF900-30
150	28.5	27.4	—	—	—	—	AMD1010-40	—	—	AMF1000-40
220	45	43.2	—	—	—	—	—	—	—	—

Note 1) Air flow capacity conditions
Suction condition ..... 32°C, Atmospheric pressure, Relative humidity 65%
ANR conversion ..... 20°C, Atmospheric pressure, Relative humidity 65%

Note 2) Air-cooled aftercooler
Inlet air temperature ..... 70°C
Ambient temperature ..... 32°C

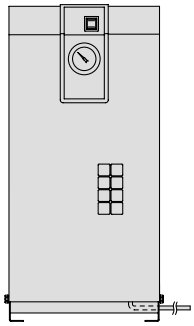
Water-cooled aftercooler
Inlet air temperature ..... 70°C (Screw compressors), 180°C (Reciprocating compressors, 70°C for HAW2,7)
Cooling water inlet temperature ..... 30°C

Note 3) Series IDF
Inlet air temperature ..... 35°C saturation (IDF1E to 37E), 40°C saturation (IDF55E to 75E, IDF120D to 240D)
Ambient temperature ..... 32°C

Note 4) Series IDU
Inlet air temperature ..... 55°C saturation (IDU3E to 75E)
Ambient temperature ..... 32°C

Note 5) Series IDG
Inlet air temperature ..... 25°C
Ambient temperature ..... 25°C

INDEX



Complies with CFC restrictions

Refrigerated Air Dryers

Series IDF/IDU

1. Standard Products

Series IDF

Standard temperature air inlet type
Rated inlet air temperature:
35, 40°C

Model	Rated inlet condition	Air flow capacity (m³/min [ANR]) 50 Hz	Air flow capacity (m³/min [ANR]) 60 Hz	Applicable air compressor (kW)	Refrigerant	Port size	Page
IDF1E	35°C, 0.7 MPa	0.1	0.12	0.75	R134a (HFC)	Rc 3/8	P.5 to 8
IDF2E		0.2	0.235	1.5			
IDF3E		0.32	0.37	2.2			
IDF4E		0.52	0.57	3.7		Rc 1/2	
IDF6E		0.75	0.82	5.5		Rc 3/4	
IDF8E		1.22	1.32	7.5			
IDF11E		1.65	1.82	11			
IDF15E1		2.8	3.1	15		Rc 1	
IDF22E		3.9	4.3	22	R407C (HFC)	R 1	P.9 to 11
IDF37E		5.7	6.1	37		R1 1/2	
IDF55E	40°C, 0.7 MPa	8.4	9.8	55		R 2	
IDF75E		11.0	12.4	75			
IDF120D		20.0	23.0	120		65 (2 1/2B) flange	P.12 to 14
IDF150D		25.0	30.0	150		80 (3B) flange	
IDF190D		32.0	38.0	190			
IDF240D		43.0	50.0	240		100 (4B) flange	
IDF370B	35°C, 0.7 MPa	54.0	65.0	370	R22	150 (6B) flange	

Series IDU

High temperature air inlet type
Rated inlet air temperature:
55°C

Model	Rated inlet condition	Air flow capacity (m³/min [ANR]) 50 Hz	Air flow capacity (m³/min [ANR]) 60 Hz	Applicable air compressor (kW)	Refrigerant	Port size	Page
IDU3E	55°C, 0.7 MPa	0.32	0.37	2.2	R134a (HFC)	Rc 3/8	P.15 to 17
IDU4E		0.52	0.57	3.7		Rc 1/2	
IDU6E		0.75	0.82	5.5		Rc 3/4	
IDU8E		1.1	1.2	7.5			
IDU11E		1.5	1.7	11			
IDU15E1		2.6	2.8	15		Rc 1	
IDU22E		3.9	4.3	22	R407C (HFC)	R 1	P.18 to 20
IDU37E		5.7	6.1	37		R 1 1/2	
IDU55E		8.4	9.8	55		R 2	
IDU75E		11.0	12.5	75			

∗ Refer to the separate catalog for dryer models conforming with foreign standards (CE and UL).

INDEX

2. Options

Description	Applicable model	Model (Suffix: Option symbol)	Page
Cool compressed air output	**IDF1E to 75E**	**IDF□E-□-A**	**P.21**
Anti-corrosive treatment for copper tube	**IDF1E to 75E**	**IDF□E-□-C**	
	IDF120D to 240D	**IDF□D-□(-□)-C**	
	IDF370B	**IDF370B-60□-X204**	
	IDU3E to 75E	**IDU□E-□-C**	
Moderate pressure specification (up to 1.6 MPa) (Auto drain bowl: Metal bowl with level gauge)	**IDF6E to 37E**	**IDF□E-□-K**	
	IDU3E to 15E1	**IDU□E-□-K**	
With a heavy-duty auto drain (applicable to moderate pressure)	**IDF4E to 75E**	**IDF□E-□-L**	
	IDF370B	**IDF370B-60□-X205**	
	IDU3E to 75E	**IDU□E-□-L**	
With a motor type auto drain Note 1)	**IDF4E to 75E**	**IDF□E-□-M**	**P.22**
	IDF120D to 240D	**IDF□D-□(-□)-M**	
	IDU3E to 75E	**IDU□E-□-M**	
With a circuit breaker	**IDF4E to 75E**	**IDF□E-□-R**	**P.23**
	IDF120D to 240D	**IDF□D-□(-□)-R**	
	IDF370B	**IDF370B-60□-X202**	
	IDU3E to 75E	**IDU□E-□-R**	
Power supply terminal block connection	**IDF4E to 15E1-10**	**IDF□E-10-S**	**P.24**
	IDU3E to 15E1-10	**IDU□E-10-S**	
With a terminal block for power supply, operating/error signal and remote operation	**IDF4E to 75E**	**IDF□E-□-T**	
	IDU3E to 75E	**IDU□E-□-T**	
With a timer controlled solenoid valve type auto drain (applicable to moderate pressure)	**IDU3E to 75E**	**IDU□E-□-V**	**P.25**
Water-cooled condenser Note 1)	**IDF120D to 240D**	**IDF□D-□(-□)-W**	

Note 1) Equipped with the IDF370B as standard.

3. Optional Accessories

Description	Page
Separately installed power transformer	**P.26 to 36**
Dedicated base for separately installed power transformer	
Dust-protecting filter set	
Bypass piping set	
Foundation bolt set	
Piping adapter	
Mounting base adapter	
Conversion piping set	
Conversion bypass piping set	

4. Data (Condensed Water Calculation, Dew Point Conversion Chart) ··· P.37

5. Safety Instructions ··· Back page 1

Series IDF/IDU
Model Selection

The corrected air flow capacity, which considers the user's operating conditions, is required for selecting air dryer. Select using the following procedures.

1 Select the IDF or IDU.

Select the IDF or IDU from inlet air temperature used.
- **Inlet air temperature 5 to 50°C ····· IDF**
- **Inlet air temperature 50 to 80°C ····· IDU**

2 Read the correction factors.

Obtain the correction factors A to D suitable for your operating condition from the table on the next page.

IDF Selection Example

Condition		Data symbol	Correction Note) factor
Inlet air temperature	40°C	A	0.82
Ambient temperature	35°C	B	0.96
Outlet air pressure dew point	10°C	C	1
Inlet air pressure	0.5 MPa	D	0.88
Air flow rate	0.3 m³/min	—	—
Power supply frequency	50 Hz	—	—

Note) Values obtained from "Correction Factors" on page 4.

IDU Selection Example

Condition		Data symbol	Correction Note) factor
Inlet air temperature	60°C	A	0.95
Ambient temperature	35°C	B	0.93
Outlet air pressure dew point	10°C	C	1
Inlet air pressure	0.5 MPa	D	0.88
Air flow rate	0.4 m³/min	—	—
Power supply frequency	60 Hz	—	—

Note) Values obtained from "Correction Factors" on page 4.

3 Check the coefficient.

Correction factor = 0.82 x 0.96 x 1 x 0.88 = 0.69
Max. coefficient value is 1.5 Correction factor is 1.5 when the calculation result is 1.5 or greater.

Correction factor = 0.95 x 0.93 x 1 x 0.88 = 0.78
Max. coefficient value is 1.5 Correction factor is 1.5 when the calculation result is 1.5 or greater.

4 Calculate the corrected air flow capacity.

Obtain the corrected air flow capacity from the following formula.
Corrected air flow capacity = Air flow rate ÷ (Correction factor A x B x C x D)

Corrected air flow capacity = 0.3 m³/min ÷ (0.82 x 0.96 x 1 x 0.88) = 0.43 m³/min

Corrected air flow capacity = 0.4 m³/min ÷ (0.95 x 0.93 x 1 x 0.88) = 0.51 m³/min

5 Select the model.

Select the model with air flow capacity which exceeds the corrected air flow capacity from the specification table. (For air flow capacity, refer to the data E on page 4.)

According to the corrected air flow capacity of 0.43 m³/min, the IDF4E will be selected which air flow capacity is 0.52 m³/min at 50 Hz.

According to the corrected air flow capacity of 0.51 m³/min, the IDU4E will be selected which air flow capacity is 0.57 m³/min at 60 Hz.

6 Options

Refer to pages 21 through to 25.

Refer to pages 21 through to 25.

7 Finalize the model number.

Refer to pages 5, 9 and 12.

Refer to pages 15 and 18.

8 Select the optional accessories.

Refer to pages 26 through to 36.

Correction Factors

Data A: Inlet Air Temperature

Series IDF

IDF1E to 37E

Inlet air temp. (°C)	Correction factor
5 to 30	1.3
35	1
40	0.82
45	0.68
50	0.57

IDF55E, 75E, 120D to 240D

Inlet air temp. (°C)	Correction factor
5 to 30	1.35
35	1.25
40	1
45	0.8
50	0.6

IDF370B

Inlet air temp. (°C)	Correction factor
5 to 30	1.25
35	1.00
40	0.83
45	0.70
50	0.60

Series IDU

IDU3E to 37E

Inlet air temp. (°C)	Correction factor
5 to 45	1.15
50	1.07
55	1
60	0.95
65	0.9
70	0.86
75	0.82
80	0.79

IDU55E, 75E

Inlet air temp. (°C)	Correction factor
5 to 45	1.21
50	1.10
55	1
60	0.87
65	0.76
70	0.74
75	0.72
80	0.70

Data B: Ambient Temperature

Series IDF

IDF1E to 75E

Ambient temp. (°C)	Correction factor
2 to 25	1.14
30	1.04
32	1
35	0.96
40	0.9

IDF120D to 240D

Ambient temp. (°C)	Correction factor
2 to 25	1.10
30	1.05
32	1
35	0.95
40	0.90

Series IDU

IDU3E to 37E

Ambient temp. (°C)	Correction factor
2 to 25	1.2
30	1.04
32	1
35	0.93
40	0.84

IDU55E, 75E

Ambient temp. (°C)	Correction factor
2 to 25	1.25
30	1.11
32	1
35	0.90
40	0.63

Data C: Outlet Air Pressure Dew Point

Series IDF

IDF1E to 75E, 120D to 240D, 370B

Outlet air pressure dew point (°C)	Correction factor
3	0.55
5	0.7
10	1
15	1.3

Series IDU

IDU3E to 37E

Outlet air pressure dew point (°C)	Correction factor
3	0.55
5	0.7
10	1
15	1.3

IDU55E, 75E

Outlet air pressure dew point (°C)	Correction factor
3	0.53
5	0.67
10	1
15	1.30

Data D: Inlet Air Pressure

Series IDF

IDF1E to 75E

Inlet air pressure (MPa)	Correction factor
0.2	0.62
0.3	0.72
0.4	0.81
0.5	0.88
0.6	0.95
0.7	1
0.8	1.06
0.9	1.11
1 to 1.6	1.16

IDF120D to 370B

Inlet air pressure (MPa)	Correction factor
0.2	0.68
0.3	0.77
0.4	0.84
0.5	0.90
0.6	0.95
0.7	1
0.8	1.03
0.9	1.06
1.0	1.08

Series IDU

IDU3E to 37E

Inlet air pressure (MPa)	Correction factor
0.2	0.62
0.3	0.72
0.4	0.81
0.5	0.88
0.6	0.95
0.7	1
0.8	1.06
0.9	1.11
1 to 1.6	1.16

IDU55E, 75E

Inlet air pressure (MPa)	Correction factor
0.2	0.62
0.3	0.69
0.4	0.77
0.5	0.85
0.6	0.93
0.7	1
0.8	1.08
0.9	1.16
1 to 1.6	1.23

Data E: Air Flow Capacity

Series IDF

Model		IDF1E	IDF2E	IDF3E	IDF4E	IDF6E	IDF8E	IDF11E	IDF15E1	IDF22E	IDF37E	IDF55E	IDF75E
Air flow capacity m^3/min (ANR)	50 Hz	0.10	0.20	0.32	0.52	0.75	1.22	1.65	2.8	3.9	5.7	8.4	11.0
	60 Hz	0.12	0.235	0.37	0.57	0.82	1.32	1.82	3.1	4.3	6.1	9.8	12.4

Model		IDF120D	IDF150D	IDF190D	IDF240D	IDF370B
Air flow capacity m^3/min (ANR)	50 Hz	20.0	25.0	32.0	43.0	54.0
	60 Hz	23.0	30.0	38.0	50.0	65.0

Note) In the case of the option A (cool compressed air output), the air flow capacity is different. Refer to page 21 for details.

Series IDU

Model		IDU3E	IDU4E	IDU6E	IDU8E	IDU11E	IDU15E1	IDU22E	IDU37E	IDU55E	IDU75E
Air flow capacity m^3/min (ANR)	50 Hz	0.32	0.52	0.75	1.1	1.5	2.6	3.9	5.7	8.4	11.0
	60 Hz	0.37	0.57	0.82	1.2	1.7	2.8	4.3	6.1	9.8	12.5

Refrigerant R134a (HFC)
Standard Temperature Air Inlet
Series IDF□E
1E, 2E, 3E, 4E, 6E, 8E, 11E, 15E1
(Inlet air temperature: 35°C, Outlet air pressure dew point: 10°C)

How to Order

IDF 8E — 10 — (Nil / A / C / K / L / M / R / S / T)

Size

Symbol	Compressor size Note)
1E	0.75 kW
2E	1.5 kW
3E	2.2 kW
4E	3.7 kW
6E	5.5 kW
8E	7.5 kW
11E	11 kW
15E1	15 kW

Note) Note that the above values are for reference only. Check the actual compressor capacity.

Voltage

Symbol	Voltage	Applicable size							
		1E	2E	3E	4E	6E	8E	11E	15E1
10	Single-phase 100 VAC (50 Hz) 100/110 VAC (60 Hz)	●	●	●	●	●	●	●	●
20	Single-phase 200 VAC (50 Hz) 200/220 VAC (60 Hz)	—	—	●	●	●	●	●	●

Option

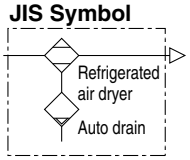
Symbol Note 1) / Description / Size	Nil None	A Cool compressed air output	C Anti-corrosive treatment for copper tube	K Moderate pressure specification (Auto drain bowl: Metal bowl with level gauge)	L With a heavy-duty auto drain (applicable to moderate pressure)	M With a motor type auto drain	R With a circuit breaker	S Power supply terminal block connection (Voltage symbol 10 only) Note 2)	T With a terminal block for power supply, operating/ error signal and remote operation
1E	●	●	●	—	—	—	—	●	—
2E	●	●	●	—	—	—	—	●	—
3E	●	●	●	—	—	—	—	●	—
4E	●	●	●	—	●	●	●	●	●
6E	●	●	●	●	●	●	●	●	●
8E	●	●	●	●	●	●	●	●	●
11E	●	●	●	●	●	●	●	●	●
15E1	●	●	●	●	●	●	●	●	●

Note 1) Enter alphabetically when multiple options are combined.
However, the following combinations are not possible.
- R and S (Because S function is also included in R.)
- S and T (Because S function is also included in T.)
- The combination of K, L and M is not possible because an auto drain can only be attached to a single option.

Note 2) Voltage symbol 20 (200 VAC) is the terminal block connection as standard. The option S cannot be chosen.
Voltage symbol 10 (100 VAC) is the power cable with plug as standard.

Note 3) Refer to page 21 through to 24 for further information on options.

JIS Symbol



Standard Specifications

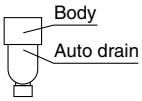
Specifications \ Model			Standard temperature air inlet							
			IDF1E	IDF2E	IDF3E	IDF4E	IDF6E	IDF8E	IDF11E	IDF15E1
Operating range	Fluid		Compressed air							
	Inlet air temperature (°C)		5 to 50							
	Inlet air pressure (MPa)		0.15 to 1.0							
	Ambient temp. (humidity) (°C)		2 to 40 (Relative humidity 85% or less)							
Rated conditions Note 3)	Air flow capacity (m^3/min)	Standard condition (ANR) Note 1) 50 Hz	0.10	0.20	0.32	0.52	0.75	1.22	1.65	2.8
		Standard condition (ANR) Note 1) 60 Hz	0.12	0.235	0.37	0.57	0.82	1.32	1.82	3.1
		Compressor intake condition Note 2) 50 Hz	0.10	0.21	0.33	0.54	0.78	1.27	1.72	2.9
		Compressor intake condition Note 2) 60 Hz	0.12	0.24	0.38	0.59	0.85	1.37	1.9	3.2
	Inlet air pressure (MPa)		0.7							
	Inlet air temperature (°C)		35							
	Ambient temperature (°C)		32							
	Outlet air pressure dew point (°C)		10							
Electric specifications	Power supply voltage (frequency) Note 4)		Single-phase: 100 VAC (50 Hz), 100/110 VAC (60 Hz) Note 4) Single-phase: 200 VAC (50 Hz), 200/220 VAC (60 Hz)							
	Power consumption (W) 50/60 Hz	Single-phase 100 V	180/202	180/202	180/202	180/202	180/202	208/236	385/440	420/480
		Single-phase 200 V	—	—						
	Operating current (A) 50/60 Hz	Single-phase 100 V	2.4/2.5	2.4/2.5	2.4/2.5	2.4/2.5	2.4/2.5	3.0/3.1	5.7/5.7	4.3/4.6
		Single-phase 200 V	—	—	1.2/1.3	1.2/1.3	1.2/1.3	1.5/1.5	3.4/3.0	3.4/3.1
Applicable circuit breaker capacity Note 5) (A)			10 (100 VAC), 5 (200 VAC)							10 (100 VAC) 10 (200 VAC)
Condenser			Air-cooled							
Refrigerant			R134a (HFC)							
Auto drain			Float type (Normally closed)	Float type (Normally open)						
Port size			Rc 3/8			Rc 1/2	Rc 3/4			Rc 1
Weight (kg)			16	17	18	22	23	27	28	46
Coating color			Body panel: White 1 Base: Gray 2							
Applicable air compressor output (Reference) For screw type (kW)			0.75	1.5	2.2	3.7	5.5	7.5	11	15

Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]
Note 3) Select the air dryer model according to "Model Selection" (page 3, 4) for models beyond the rated specifications.
Note 4) When selecting a power supply voltage, refer to "How to Order" on page 5.
Note 5) Install a circuit breaker with a sensitivity current 30 mA.

Replacement Parts

Model	IDF1E	IDF2E	IDF3E	IDF4E	IDF6E	IDF8E	IDF11E	IDF15E1
Auto drain replacement parts no. Note 6)	AD37	AD38			AD48			

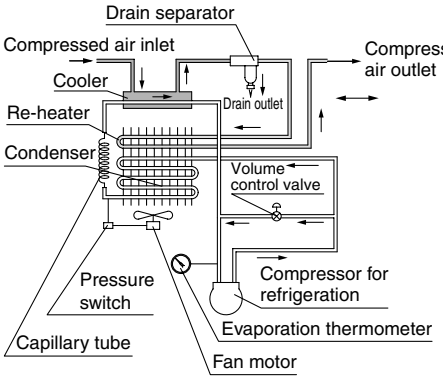
Note 6) The part number for the auto drain components only without including the body part. Body part replacement is not possible.



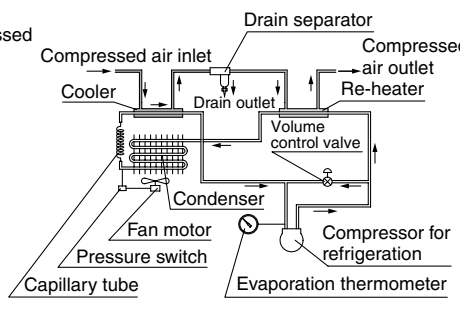
Construction (Air/Refrigerant Circuit)

Humid, hot air coming into the air dryer will be cooled down by a cooler (heat exchanger). Water condensed at this time will be removed from the air by a drain separator (auto drain) and drained out automatically. Air separated from the water will be heated by a re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.

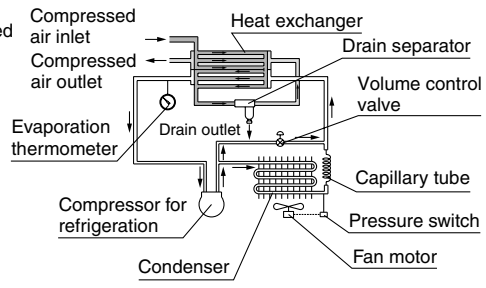
IDF1E



IDF2E, 3E

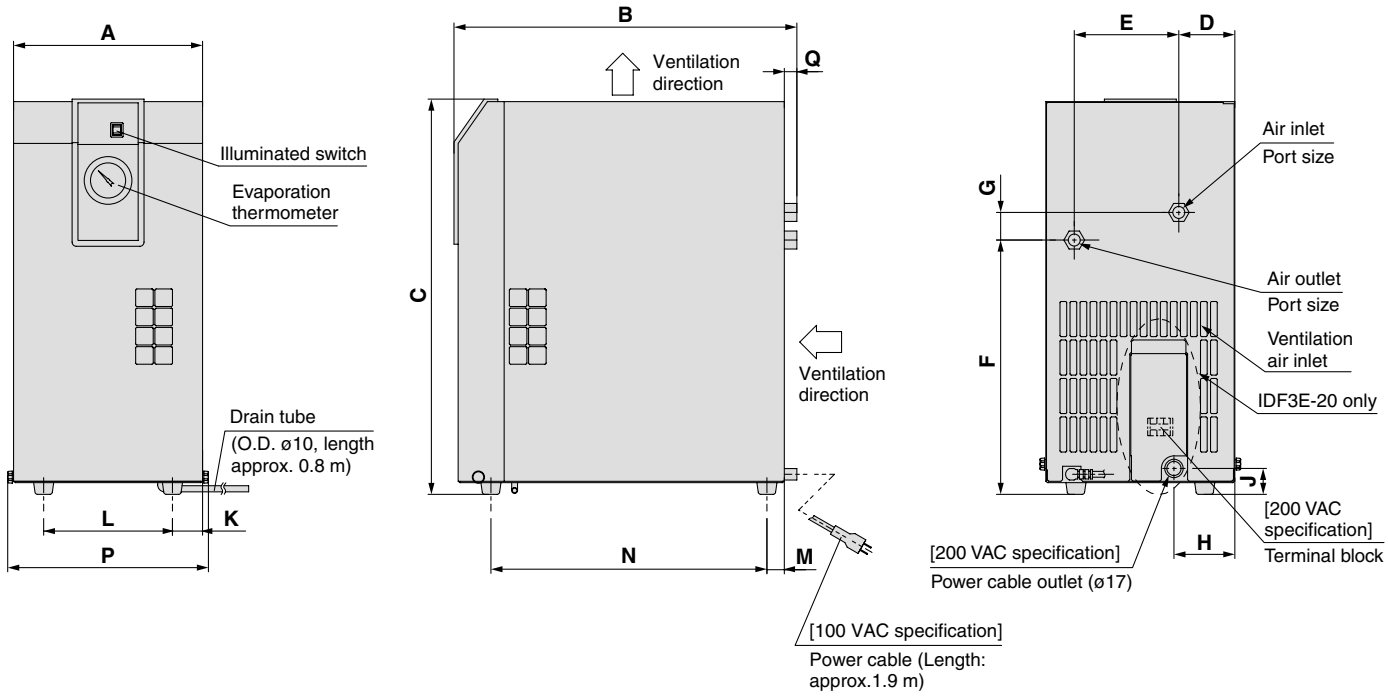


IDF4E, 6E, 8E, 11E, 15E1

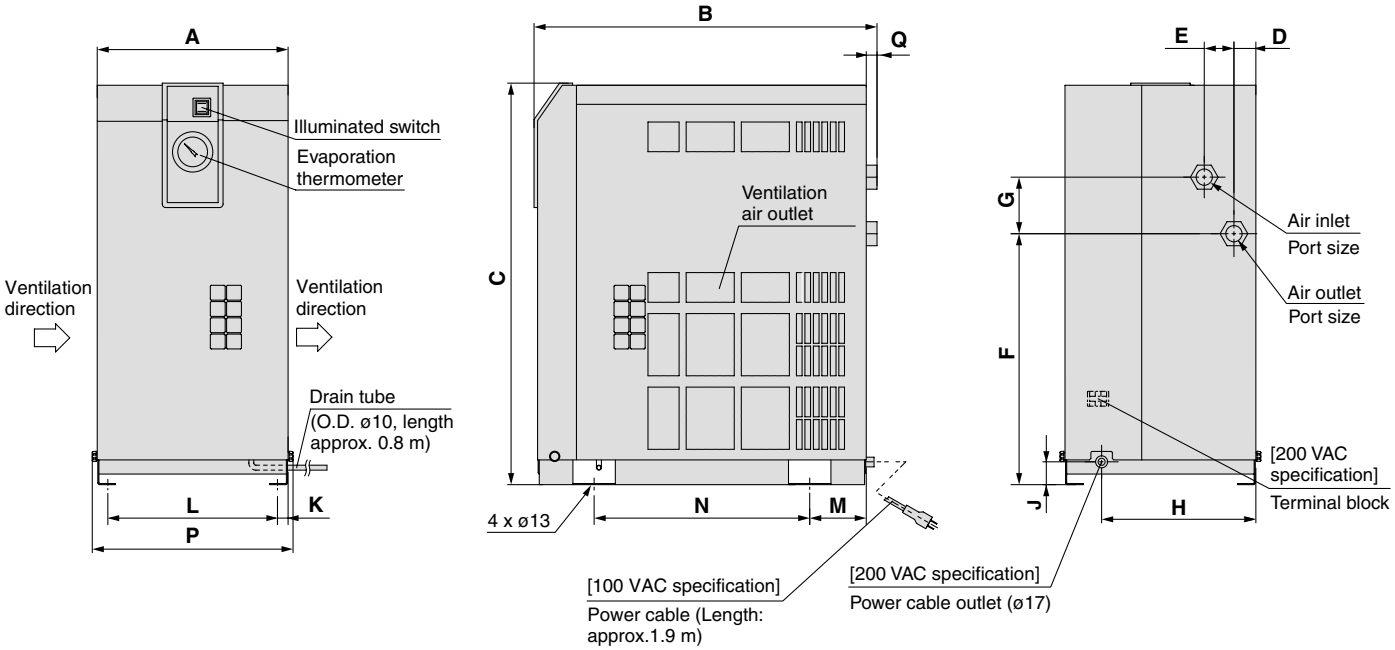


Dimensions

IDF1E to 3E



IDF4E to 11E

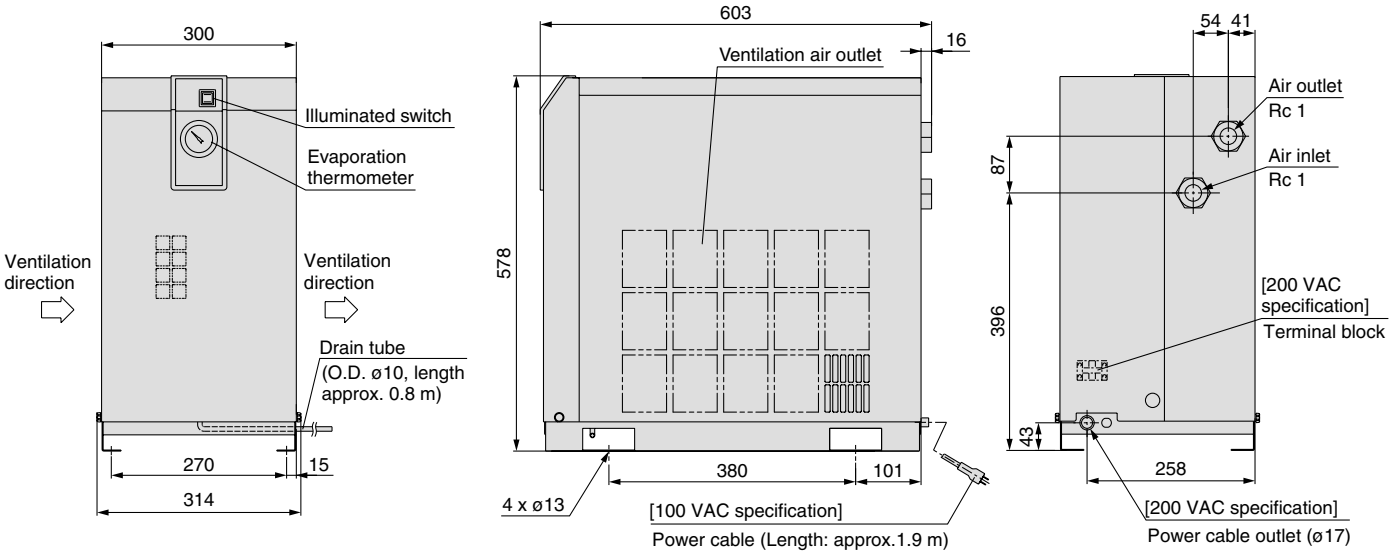


Dimensions (mm)

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
IDF1E	Rc 3/8	226	410	413	69	101	270	32	—	—	38	150	21	330	240	15
IDF2E					51	125	232	138					24	327		
IDF3E				473	67		304	33	73	31	36	154	21	330		
IDF4E	Rc 1/2	270	453	498	31	42	283	80	230	32	15	240	80	275	284	13
IDF6E	Rc 3/4		455													15
IDF8E			485	568			355							300		
IDF11E																

Dimensions

IDF15E1



Refrigerant R407C (HFC)
Standard Temperature Air Inlet
Series IDF□E
22E, 37E, 55E, 75E
(Inlet air temp.: 35°C (22E, 37E), 40°C (55E, 75E), Outlet air pressure dew point: 10°C)

How to Order

IDF 55E — 30 — (Nil / A / C / K / L / M / R / T)

Size

Symbol	Compressor size Note)
22E	22 kW
37E	37 kW
55E	55 kW
75E	75 kW

Note) Note that the above values are for reference only. Check the actual compressor capacity.

Voltage

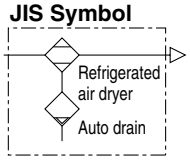
Symbol	Voltage	Applicable size			
		22E	37E	55E	75E
20	Single-phase 200 VAC (50 Hz) 200/220 VAC (60 Hz)	●	●	—	—
30	Three-phase 200 VAC (50 Hz) 200/220 VAC (60 Hz)	●	●	●	●

Option

Symbol Note 1) / Description / Size	Nil	A	C	K	L	M	R	T
	None	Cool compressed air output	Anti-corrosive treatment for copper tube	Moderate pressure specification (Auto drain bowl: Metal bowl with level gauge)	With a heavy-duty auto drain (applicable to moderate pressure)	With a motor type auto drain	With a circuit breaker	With a terminal block for power supply, operating/ error signal and remote operation
22E	●	●	●	●	●	●	●	●
37E	●	●	●	●	●	●	●	●
55E	●	●	●	— Note 2)	●	●	●	●
75E	●	●	●	— Note 2)	●	●	●	●

Note 1) Enter alphabetically when multiple options are combined.
However, the following combinations are not possible.
• The combination of K, L and M is not possible because an auto drain can only be attached to a single option.
Note 2) Select the option L for the 55E and 75E which need moderate pressure.
Note 3) Refer to pages 21 through to 24 for further information on options.

JIS Symbol



Standard Specifications

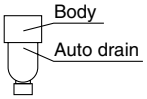
Specifications \ Model				Standard temperature air inlet			
				IDF22E	IDF37E	IDF55E	IDF75E
Operating range	Fluid			Compressed air			
	Inlet air temperature		(°C)	5 to 50			
	Inlet air pressure		(MPa)	0.15 to 1.0			
	Ambient temp. (humidity)		(°C)	2 to 40 (Relative humidity 85% or less)			
Rated conditions Note 3)	Air flow capacity (m^3/min)	Standard condition (ANR) Note 1)	50 Hz	3.9	5.7	8.4	11.0
			60 Hz	4.3	6.1	9.8	12.4
		Compressor intake condition Note 2)	50 Hz	4.1	5.9	8.7	11.5
			60 Hz	4.5	6.4	10.2	12.9
	Inlet air pressure		(MPa)	0.7			
	Inlet air temperature		(°C)	35		40	
	Ambient temperature		(°C)	32			
	Outlet air pressure dew point		(°C)	10			
Electric specifications	Power supply voltage (frequency) Note 4)			Single-phase/Three-phase: 200 VAC (50 Hz) Note 4) Single-phase/Three-phase: 200/220 VAC (60 Hz)		Three-phase: 200 VAC (50 Hz) Three-phase: 200/220 VAC (60 Hz)	
	Power consumption (W) 50/60 Hz	Single-phase 200 V		810/940	810/940	—	—
		Three-phase 200 V		850/1070	850/1070	1300/1700	2000/2500
	Operating current (A) 50/60 Hz	Single-phase 200 V		4.3/4.7	4.3/4.7	—	—
		Three-phase 200 V		3.3/3.5	3.3/3.5	5.0/5.4	7.2/8.0
Applicable circuit breaker capacity Note 5)			(A)	10 (200 VAC)			15 (200 VAC)
Condenser				Air-cooled			
Refrigerant				R407C (HFC)			
Auto drain				Float type (Normally open)			
Port size				R 1	R 1 1/2	R 2	
Weight			(kg)	54	62	100	116
Coating color				Body panel: White 1 Base: Gray 2			
Applicable air compressor output (Reference) For screw type			(kW)	22	37	55	75

Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]
Note 3) Select the air dryer model according to "Model Selection" (page 3, 4) for models beyond the rated specifications.
Note 4) When selecting a power supply voltage, refer to "How to Order" on page 9.
Note 5) Install a circuit breaker with a sensitivity current 30 mA.

Replacement Parts

Model	IDF22E	IDF37E	IDF55E	IDF75E
Auto drain replacement parts no. Note 6)	AD48			

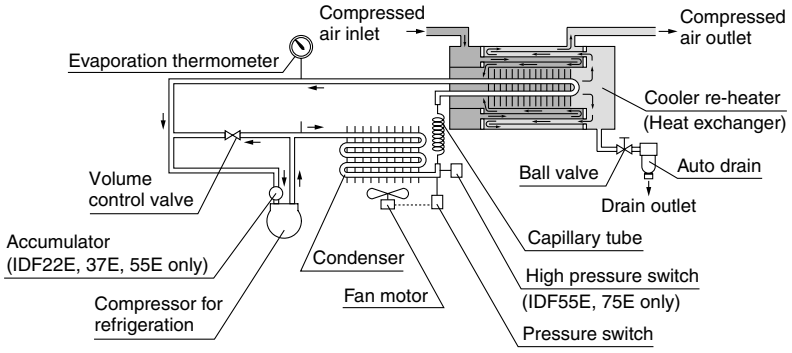
Note 6) The part number for the auto drain components only without including the body part. Body part replacement is not possible.



Construction (Air/Refrigerant Circuit)

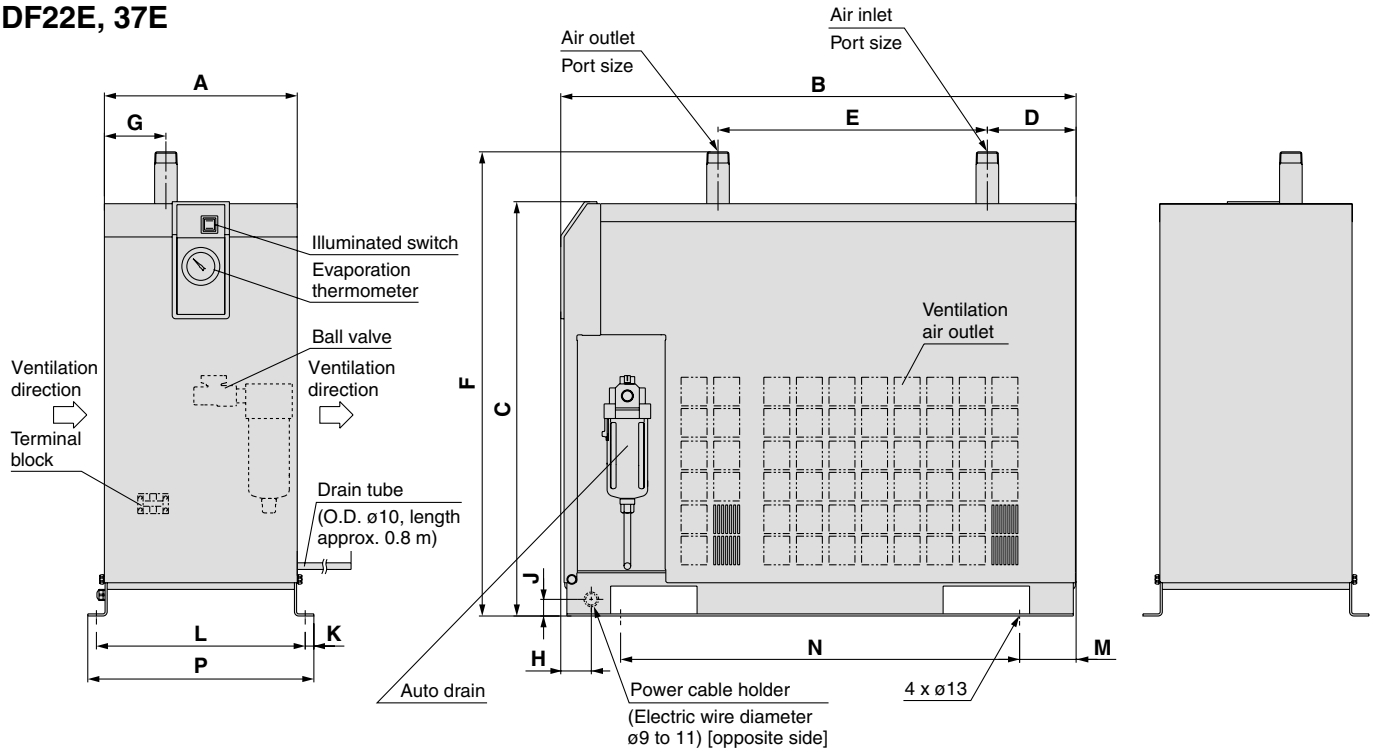
Humid, hot air coming into the air dryer will be cooled down by a cooler re-heater (heat exchanger). Water condensed at this time will be removed from the air by an auto drain and drained out automatically. Air separated from the water will be heated by a cooler re-heater (heat exchanger) to obtain the dried air, which goes through to the outlet side.

IDF22E, 37E, 55E, 75E

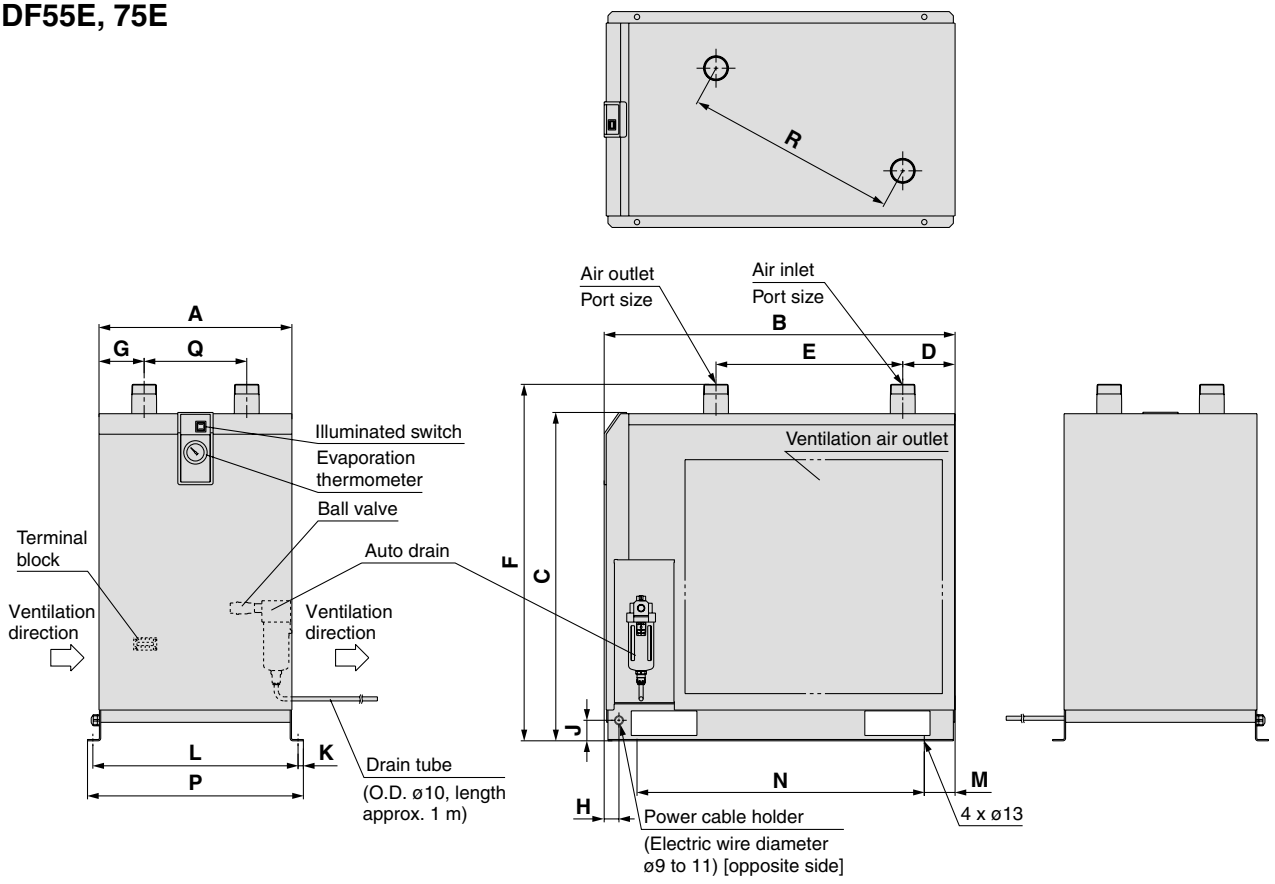


Dimensions

IDF22E, 37E



IDF55E, 75E



Dimensions (mm)

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R
IDF22E	R 1	290	775	623	134	405	698	93	46	25	13	314	85	600	340	—	—
IDF37E	R 1 1/2		855											680			
IDF55E	R 2	470	855	800	128	455	868	110	36	50	13	500	75	700	526	250	519
IDF75E				900			968										

Refrigerant R407C (HFC) / R22
Standard Temperature Air Inlet
Series IDF□D, B
120D, 150D, 190D, 240D, 370B
(Inlet air temp.: 40°C (120D, 150D, 190D, 240D), 35°C (370B), Outlet air pressure dew point: 10°C)

How to Order

Refrigerant R407C
IDF120D to 240D

IDF 120D — 3 / 9 — 220V / 240V / 380V / 400V / 415V / 440V — Nil / C / M / R / W

Size

Symbol	Compressor size
120D	120 kW
150D	150 kW
190D	190 kW
240D	240 kW

Voltage

Symbol	Voltage
3	Three-phase 200 VAC (50 Hz) 200/220 VAC (60 Hz)
9	Three-phase different voltage (Built-in transformer)

Option

Symbol	Description
Nil	None
C	Anti-corrosive treatment for copper tube
M	With a motor type auto drain
R	With a circuit breaker
W	Water-cooled condenser

Note 1) The combination of -9 and -W is not possible. (Order Transformer separately.)
Note 2) Enter alphabetically when multiple options are combined.
Note 3) Refer to pages 21 through to 25 for further information on options.

Refrigerant R22
IDF370B

IDF 370B — 60 — 3 / 9 — 220V / 240V / 380V / 400V / 415V / 440V — Nil / C / L / R / Z

Size

Symbol	Compressor size
370B	370 kW

Port size

Symbol	Port size
60	150 (6B) flange

Voltage

Symbol	Voltage
3	Three-phase 200 VAC (50/60 Hz)
9 Note)	Three-phase different voltage

Note) Transformer integrated into the base

Option

Symbol	Description
Nil	None
C	Anti-corrosive treatment for copper tube
L	With a heavy-duty auto drain Note 3)
R	With a circuit breaker
Z	Refrigerant R407C Note 4)

Note 1) Indicate in numeric order when multiple options are combined.
Note 2) Refer to pages 21 and 23 for further information on options.
Note 3) Not applicable to the moderate pressure specification.
Note 4) The refrigerant used for standard specification is R22.

Standard Specifications

Specifications \ Model				Standard temperature air inlet				
				IDF120D	IDF150D	IDF190D	IDF240D	IDF370B
Operating range	Fluid			Compressed air				
	Inlet air temperature (°C)			5 to 50				
	Inlet air pressure (MPa)			0.15 to 0.97				
	Ambient temp. (humidity) (°C)			2 to 43 (Relative humidity 85% or less)				
Rated conditions Note 3)	Air flow capacity (m^3/min)	Standard condition (ANR) Note 1)	50 Hz	20	25	32	43	54
			60 Hz	23	30	38	50	65
		Compressor intake condition Note 2)	50 Hz	21	26	33	45	56
			60 Hz	24	31	40	52	68
	Inlet air pressure (MPa)			0.7				
	Inlet air temperature (°C)			40				35
	Ambient temperature (°C)			32				—
	Outlet air pressure dew point (°C)			10				
Electric specifications	Power supply voltage (frequency) Note 4)			Three-phase: 200 VAC (50 Hz), 200/220 VAC (60 Hz)				Three-phase: 200 VAC (50/60 Hz)
	Power consumption (kW) 50/60 Hz	Three-phase 200 V		2.5	4.0	4.9	6.3	8.1
				3.1	5.0	5.9	7.6	9.5
	Operating current (A) 50/60 Hz	Three-phase 200 V		9.8	15.3	19.5	26.1	28.0
				10.1	16.1	20.1	26.4	31.0
Applicable circuit breaker capacity Note 5) (A)				30	45	50	60	80
Condenser				Air-cooled				Water-cooled
Refrigerant				R407C (HFC)				R22
Auto drain				ADH4000-04				ADM200-042-8
Port size Note 6)				65 (2 1/2B) flange	80 (3B) flange		100 (4B) fange	150 (6B) flange
Weight (kg)				330	350	450	660	1100
Coating color				Body panel: White Base: Black				Operating panel: Sky blue Other panel (except base): White
Applicable air compressor output (Reference) For screw type (kW)				120	150	190	240	370

Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]
Note 3) Select the air dryer model according to "Model Selection" (page 3, 4) for models beyond the rated specifications.
Note 4) When selecting a power supply voltage, refer to "How to Order" on page 12.
Note 5) Install a circuit breaker with a sensitivity current 30 mA.
Note 6) JIS 10K FF is used as a flange.

Water-Cooled Condenser Specifications (IDF370B)

Condenser	Shell and tube type
Cooling water flow rate Note 1)	100 ℓ/min
Cooling tower performance Note 2)	10 RT
Water flow regulator	Pressure type automatic water supply valve
Port size for water side	1 1/4 union

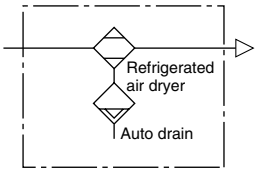
Note 1) Value with rated load when cooling water inlet temperature is 32°C.
Note 2) Calculated at 1 RT = 3300 kcal/h

Motor Type Auto Drain

Model	Operating cycle	
IDF370B	4 times per minute	for 8 seconds every one minute

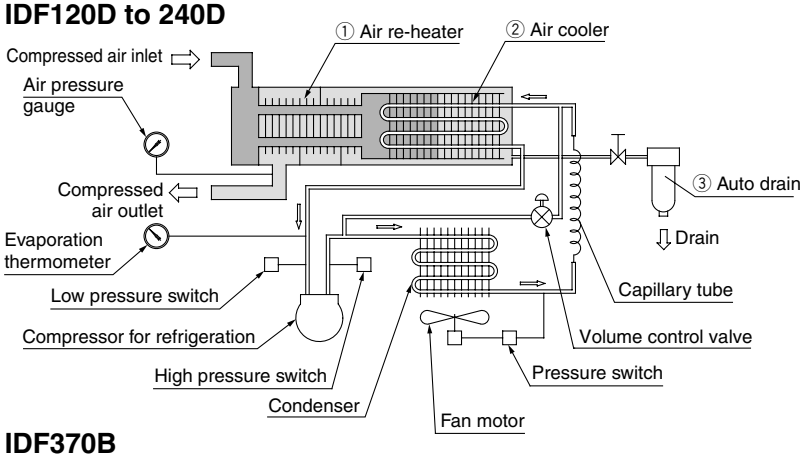
Power supply	200 VAC 50/60 Hz
Power consumption	4 W

JIS Symbol

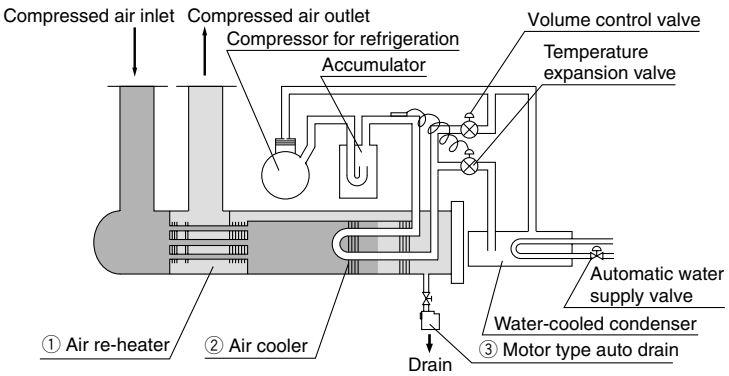


Construction (Air/Refrigerant Circuit)

IDF120D to 240D



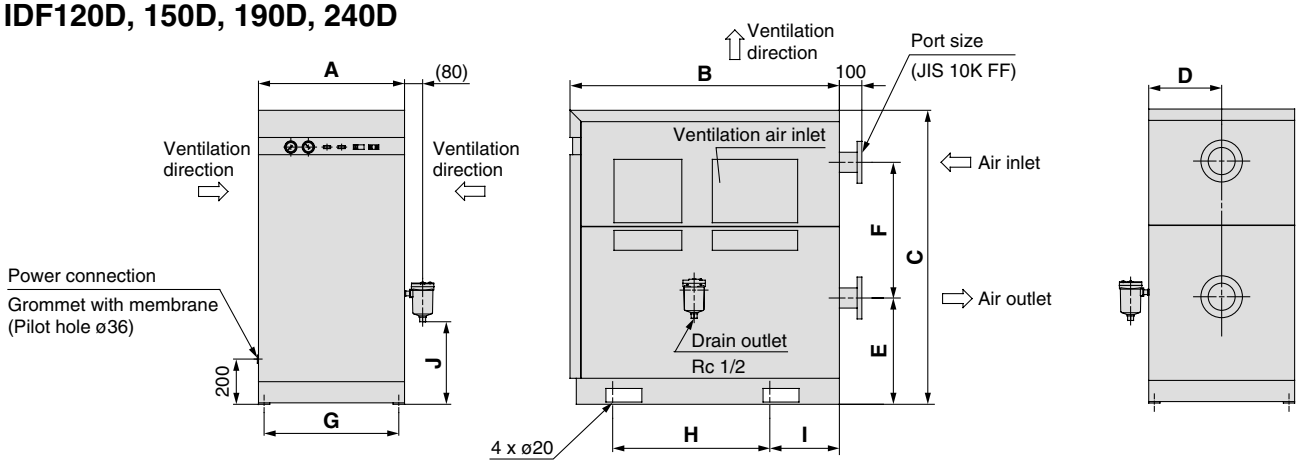
IDF370B



High temperature humid air from the air compessor passes through the air re-heater ① and is pre-cooled by dehumified cool air. Then, it is cooled to the specified temperature by the air cooler ② using the evaporation heat of refrigerant.
At this time, the oil mist and moisture generated by condensation are automatically exhausted by the auto drain ③. The cooled and dehumidified air goes back to the air re-heater ① and heat is exchanged with hot air that flows into the air re-heater. It is supplied as dry warm air without "sweating" in the piping system.

Dimensions

IDF120D, 150D, 190D, 240D

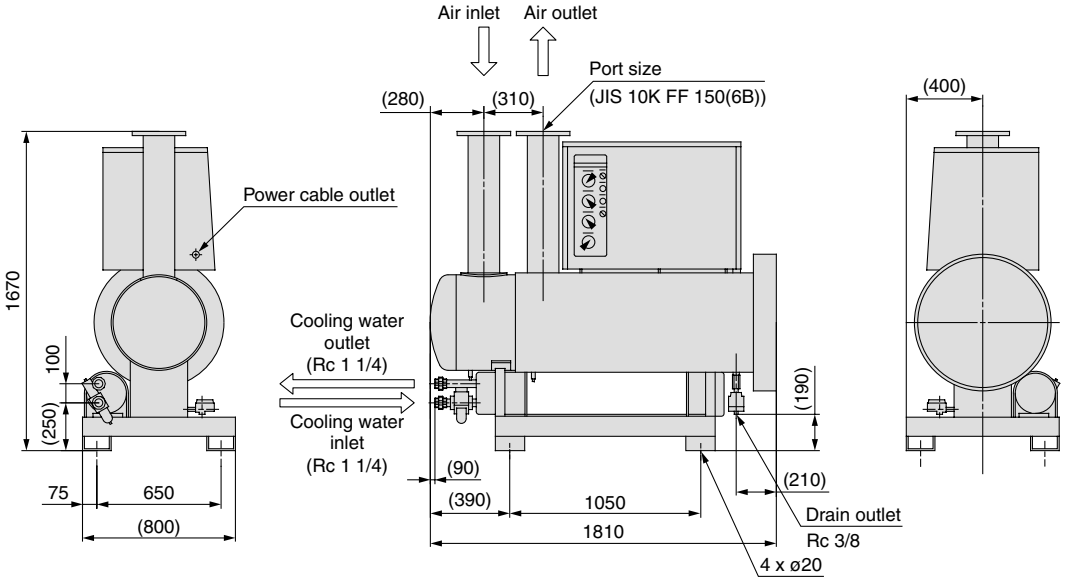


(mm)

Model	Inlet and outlet port	A	B	C	D	E	F	G	H	I	J
IDF120D	JIS 10K FF 65 (2 1/2B) flange	650	1200	1300	325	470	600	600	660	330	365
IDF150D	JIS 10K FF 80 (3B) flange										
IDF190D	JIS 10K FF 80 (3B) flange	750	1510	1320	375	480	600	700	800	355	427
IDF240D	JIS 10K FF 100 (4B) flange	770	1550	1640	385	703	730	700	800	355	592

∗ The auto drain is enclosed in the same shipping package as the main body. The customer is required to mount the auto drain to the air dryer.

IDF370B



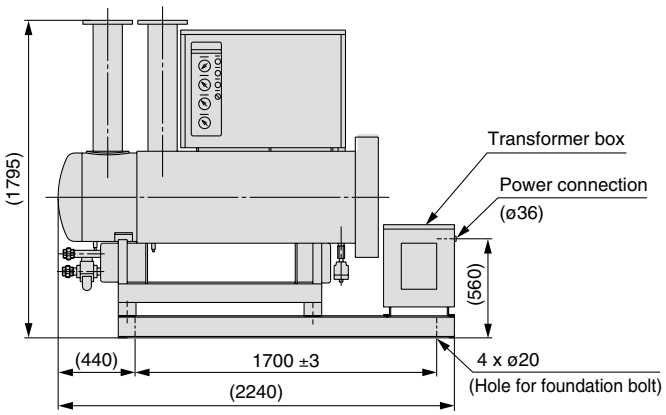
Power Transformer Integrated Type

IDF370B

The power transformer marked with the voltage symbol “9” is integrated into the refrigerated air dryer.

IDF120D to 240D

The power transformer marked with the voltage symbol “9” is built into the main body, and the outside dimensions are the same as those with the voltage symbol “3”.



Refrigerant R134a (HFC)
High Temperature Air Inlet
Series IDU□E
3E, 4E, 6E, 8E, 11E, 15E1
(Inlet air temperature: 55°C, Outlet air pressure dew point: 10°C)

How to Order

IDU **4E** — **10** — **Nil**

Size

Symbol	Compressor size Note)
3E	2.2 kW
4E	3.7 kW
6E	5.5 kW
8E	7.5 kW
11E	11 kW
15E1	15 kW

Note) Note that the above values are for reference only. Check the actual compressor capacity.

Voltage

Symbol	Voltage	Applicable size					
		3E	4E	6E	8E	11E	15E1
10	Single-phase 100 VAC (50 Hz) 100/110 VAC (60 Hz)	●	●	●	●	●	●
20	Single-phase 200 VAC (50 Hz) 200/220 VAC (60 Hz)	●	●	●	●	●	●
23	Single-phase 230 VAC (50 Hz)	●	●	●	●	●	●

Option

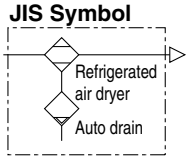
Symbol Note 1) / Description / Size	**Nil** None	**C** Anti-corrosive treatment for copper tube	**K** Moderate pressure specification (Auto drain bowl: Metal bowl with level gauge)	**L** With a heavy-duty auto drain (applicable to moderate pressure)	**M** With a motor type auto drain (Voltage symbol 10, 20 only)	**R** With a circuit breaker	**S** Power supply terminal block connection (Voltage symbol 10 only) Note 2)	**T** With a terminal block for power supply, operating/ error signal and remote operation	**V** With a timer controlled solenoid valve type auto drain (Voltage symbol 23 only) (applicable to moderate pressure)
3E	●	●	●	●	●	●	●	●	●
4E	●	●	●	●	●	●	●	●	●
6E	●	●	●	●	●	●	●	●	●
8E	●	●	●	●	●	●	●	●	●
11E	●	●	●	●	●	●	●	●	●
15E1	●	●	●	●	●	●	●	●	●

Note 1) Enter alphabetically when multiple options are combined.
However, the following combinations are not possible.
- R and S (Because S function is also included in R.)
- S and T (Because S function is also included in T.)
- The combination of K, L, M and V is not possible because an auto drain can only be attached to a single option.

Note 2) Voltage symbol 20 (200 VAC) and 23 (230 VAC) are the terminal block connection as standard. The option S cannot be chosen.
Voltage symbol 10 (100 VAC) is the power cable with plug as standard.

Note 3) Refer to pages 21 through to 25 for further information on options.

JIS Symbol



Standard Specifications

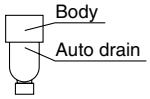
Specifications \ Model				High temperature air inlet					
				IDU3E	IDU4E	IDU6E	IDU8E	IDU11E	IDU15E1
Operating range	Fluid			Compressed air					
	Inlet air temperature		(°C)	5 to 80					
	Inlet air pressure		(MPa)	0.15 to 1.0					
	Ambient temp. (humidity)		(°C)	2 to 40 (Relative humidity 85% or less)					
Rated conditions Note 3)	Air flow capacity (m^3/min)	Standard condition (ANR) Note 1)	50 Hz	0.32	0.52	0.75	1.1	1.5	2.6
			60 Hz	0.37	0.57	0.82	1.2	1.7	2.8
		Compressor intake condition Note 2)	50 Hz	0.33	0.54	0.78	1.14	1.6	2.7
			60 Hz	0.38	0.59	0.85	1.25	1.8	2.9
	Inlet air pressure		(MPa)	0.7					
	Inlet air temperature		(°C)	55					
	Ambient temperature		(°C)	32					
	Outlet air pressure dew point		(°C)	10					
Electric specifications	Power supply voltage (frequency) Note 4)			Single-phase: 100 VAC (50 Hz), 100/110 VAC (60 Hz) Note 4) Single-phase: 200 VAC (50 Hz), 200/220 VAC (60 Hz) Single-phase: 230 VAC ±10% (50 Hz)					
	Power consumption (W) 50/60 Hz	Single-phase 100 V / Single-phase 200 V		180/202	208/236	385/440	250/290 Note 5)	425/470 Note 5)	460/530 Note 5)
		Single-phase 230 V (50 Hz)		210	220	400	260	425	450
	Operating current (A) 50/60 Hz	100 V		2.4/2.5	3.0/3.1	5.7/5.7	3.4/3.5	5.7/6.0	4.6/4.9
		200 V		1.2/1.3	1.5/1.5	3.4/3.0	1.7/1.7	3.5/3.2	3.6/3.4
		230 V (50 Hz)		1.5	1.6	2.9	1.7	3.0	3.2
Applicable circuit breaker capacity Note 6)			(A)	10 (100 VAC), 5 (200 VAC, 230 VAC)					10 (100 VAC) 10 (200 VAC)
Refrigerant				R134a (HFC)					
Auto drain				Float type (Normally open)					
Port size				Rc 3/8	Rc 1/2	Rc 3/4			Rc 1
Weight			(kg)	23	27	28	44	47	71
Coating color				Body panel: White 1 Base: Gray 2					
Applicable air compressor output (Reference) For screw type			(kW)	2.2	3.7	5.5	7.5	11	15

Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]
Note 3) Select the air dryer model according to "Model Selection" (page 3, 4) for models beyond the rated specifications.
Note 4) When selecting a power supply voltage, refer to "How to Order" on page 15.
Note 5) For the IDU8E or larger models, cooling with the aftercooler helps save energy.
Note 6) Install a circuit breaker with a sensitivity current 30 mA.

Replacement Parts

Model	IDU3E	IDU4E	IDU6E	IDU8E	IDU11E	IDU15E1
Auto drain replacement parts no. Note 7)	AD48					

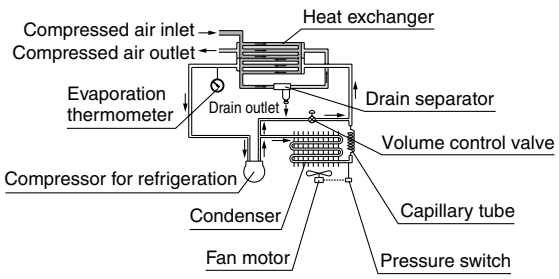
Note 7) The part number for the auto drain components only without including the body part. Body part replacement is not possible.



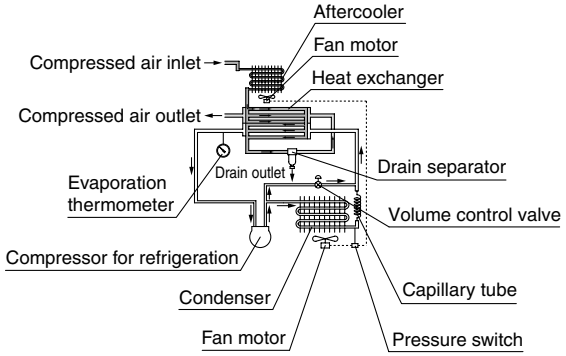
Construction (Air/Refrigerant Circuit)

Humid, hot air coming into the air dryer will be cooled down by a heat exchanger. Water condensed at this time will be removed from the air by a drain separator and drained out automatically. Air separated from the water will be heated by a heat exchanger to obtain the dried air, which goes through to the outlet side.
For models IDU8E to 15E1, the humid and hot air introduced to the air dryer will be cooled down by the aftercooler before being cooled down by the heat exchanger.

IDU3E, 4E, 6E

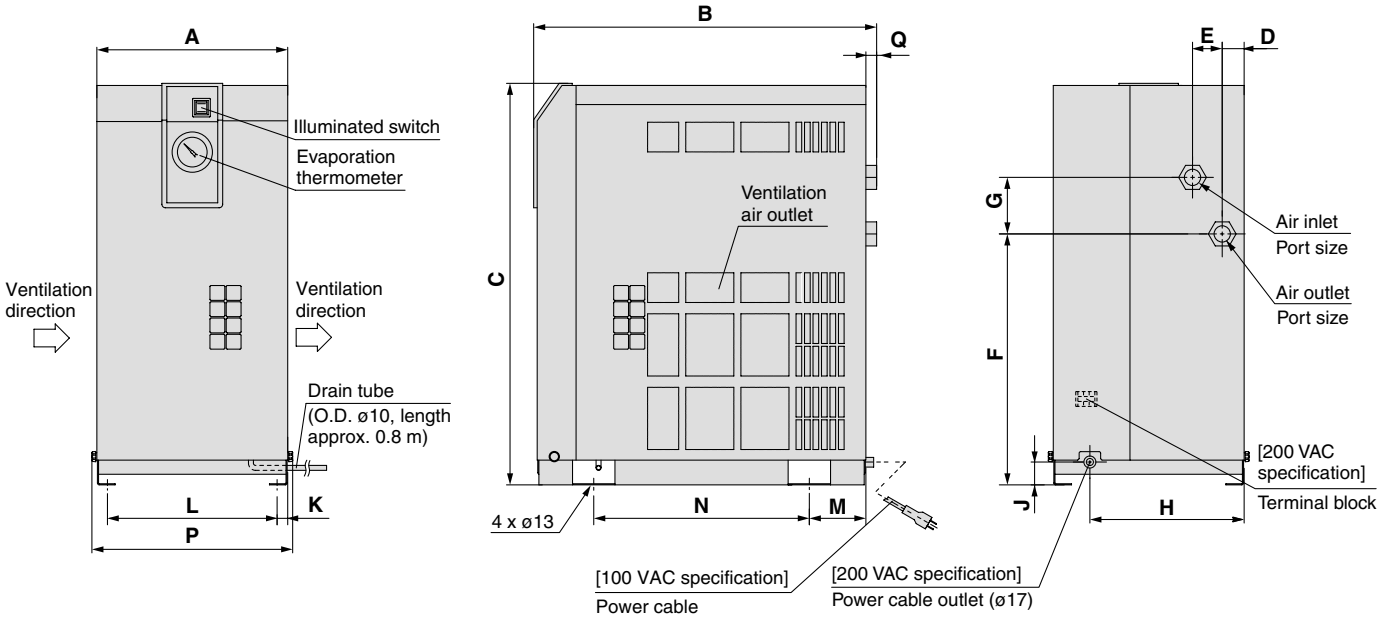


IDU8E, 11E, 15E1



Dimensions

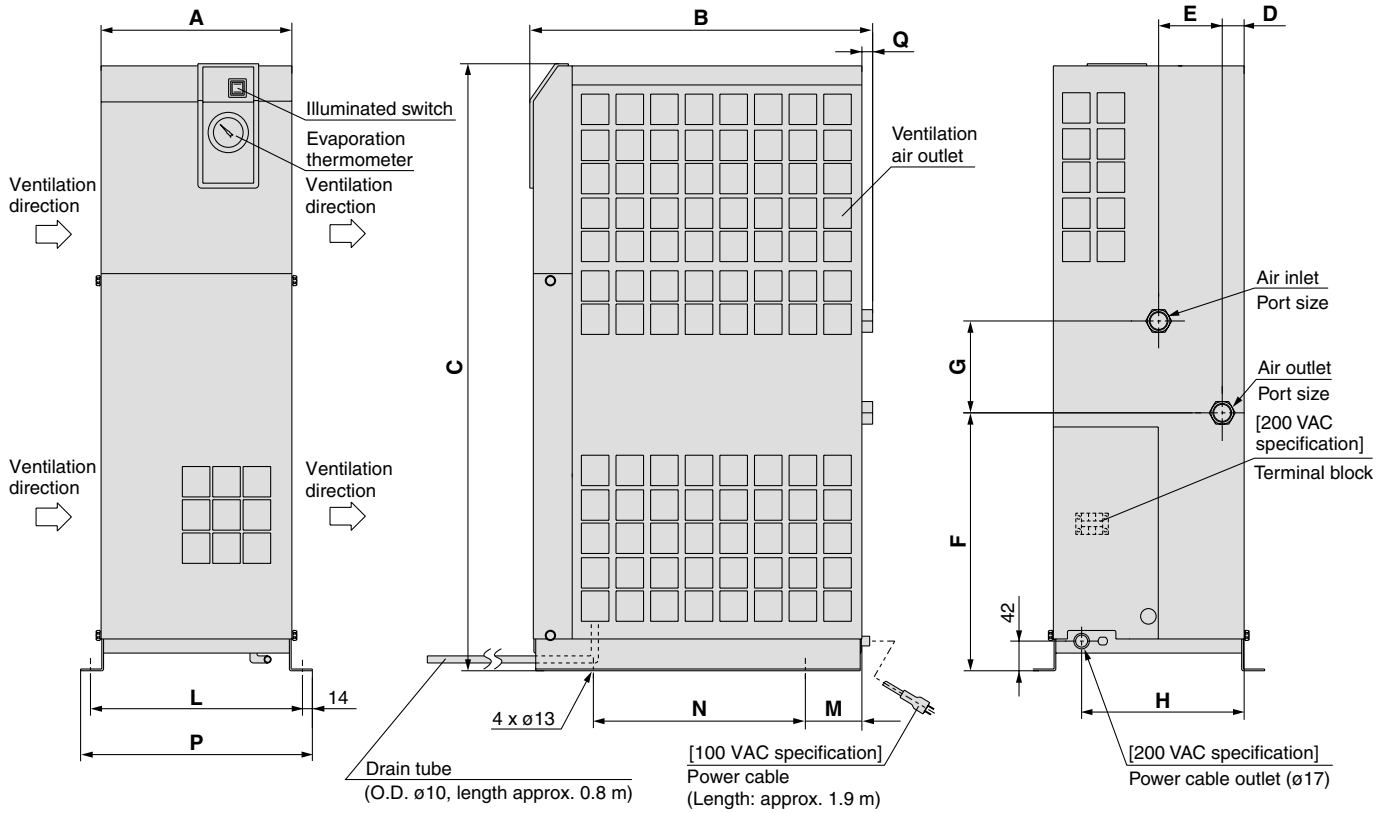
IDU3E to 6E



Dimensions (mm)

Model	Port size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
IDU3E	Rc 3/8	270	455	498	31	42	283	80	230	32	15	240	80	275	284	15
IDU4E	Rc 1/2		483	568			355							300		13
IDU6E	Rc 3/4		485													15

IDU8E to 15E1



Dimensions (mm)

Model	Port size	A	B	C	D	E	F	G	H	L	M	N	P	Q
IDU8E	Rc 3/4	270	485	859	31	90	365	130	230	300	80	300	328	15
IDU11E				909										
IDU15E1	Rc 1	300	620	960	79	54	425	93	258	330	66	470	358	16

Refrigerant R407C (HFC)
High Temperature Air Inlet
Series IDU□E
22E, 37E, 55E, 75E
(Inlet air temperature: 55°C, Outlet air pressure dew point: 10°C)

How to Order

IDU **22E** — **30** —

Nil
C
L
M
R
T
V

Size

Symbol	Compressor size Note)
22E	22 kW
37E	37 kW
55E	55 kW
75E	75 kW

Note) Note that the above values are for reference only. Check the actual compressor capacity.

Voltage

Symbol	Voltage
23	Single-phase 230 VAC (50 Hz)
30	Three-phase 200 VAC (50 Hz) 200/220 VAC (60 Hz)

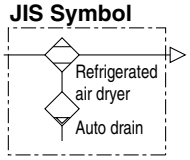
Option

Symbol Note 1) / Description / Size	Nil	C	L	M	R	T	V
	None	Anti-corrosive treatment for copper tube	With a heavy-duty auto drain (applicable to moderate pressure)	With a motor type auto drain (Voltage symbol 30 only)	With a circuit breaker	With a terminal block for power supply, operating/ error signal and remote operation	With a timer controlled solenoid valve type auto drain (Voltage symbol 23 only) (applicable to moderate pressure)
22E	●	●	●	●	●	●	●
37E	●	●	●	●	●	●	●
55E	●	●	●	●	●	●	●
75E	●	●	●	●	●	●	●

Note 1) Enter alphabetically when multiple options are combined.
However, the following combinations are not possible.
• The combination of L, M and V is not possible because an auto drain can only be attached to a single option.
Note 2) Refer to pages 21 through to 24 for further information on options.

Standard Specifications

JIS Symbol



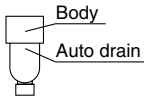
Specifications \ Model				High temperature air inlet			
				IDU22E	IDU37E	IDU55E	IDU75E
Operating range	Fluid			Compressed air			
	Inlet air temperature (°C)			5 to 80			
	Inlet air pressure (MPa)			0.15 to 1.0			
	Ambient temp. (humidity) (°C)			2 to 40 (Relative humidity 85% or less)			
Rated conditions Note 3)	Air flow capacity (m^3/min)	Standard condition (ANR) Note 1)	50 Hz	3.9	5.7	8.4	11.0
			60 Hz	4.3	6.1	9.8	12.5
		Compressor intake condition Note 2)	50 Hz	4.1	5.9	8.7	11.5
			60 Hz	4.5	6.4	10.2	13.0
	Inlet air pressure (MPa)			0.7			
	Inlet air temperature (°C)			55			
	Ambient temperature (°C)			32			
	Outlet air pressure dew point (°C)			10			
Electric specifications	Power supply voltage (frequency)			Three-phase: 200 VAC (50 Hz) Three-phase: 200/220 VAC (60 Hz)			
	Power consumption (W) 50/60 Hz	Three-phase 200 V		1100/1450		1530/2000	2200/2850
		Single-phase 230 V (50 Hz)		960	1600		2300
	Operating current (A) 50/60 Hz	Three-phase 200 V		4.2/4.8		6.3/6.8	8.2/9.3
		Single-phase 230 V (50 Hz)		4.3	7.5		10.7
	Applicable circuit breaker (A) capacity Note 4)	Three-phase 200 V		10			15
		Single-phase 230 V (50 Hz)		10			20
Refrigerant				R407C (HFC)			
Auto drain				Float type (Normally open)			
Port size				R 1	R 1 1/2	R 2	
Weight (kg)				90	130	160	166
Coating color				Body panel: White 1 Base: Gray 2			
Applicable air compressor output (Reference) For screw type (kW)				22	37	55	75

Note 1) Air flow capacity under the standard condition (ANR) [atmospheric pressure 20°C, relative humidity 65%]
Note 2) Air flow capacity converted by the compressor intake condition [atmospheric pressure 32°C]
Note 3) Select the air dryer model according to "Model Selection" (page 3, 4) for models beyond the rated specifications.
Note 4) Install a circuit breaker with a sensitivity current 30 mA.

Replacement Parts

Model	IDU22E	IDU37E	IDU55E	IDU75E
Auto drain replacement parts no. Note 5)	AD48			

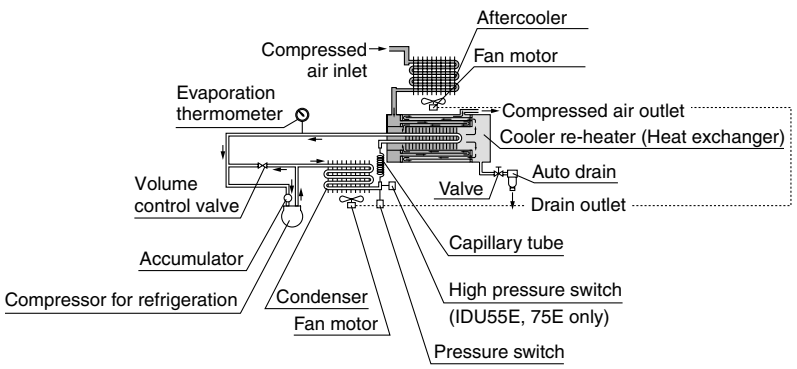
Note 5) The part number for the auto drain components only without including the body part.
Body part replacement is not possible.



Construction (Air/Refrigerant Circuit)

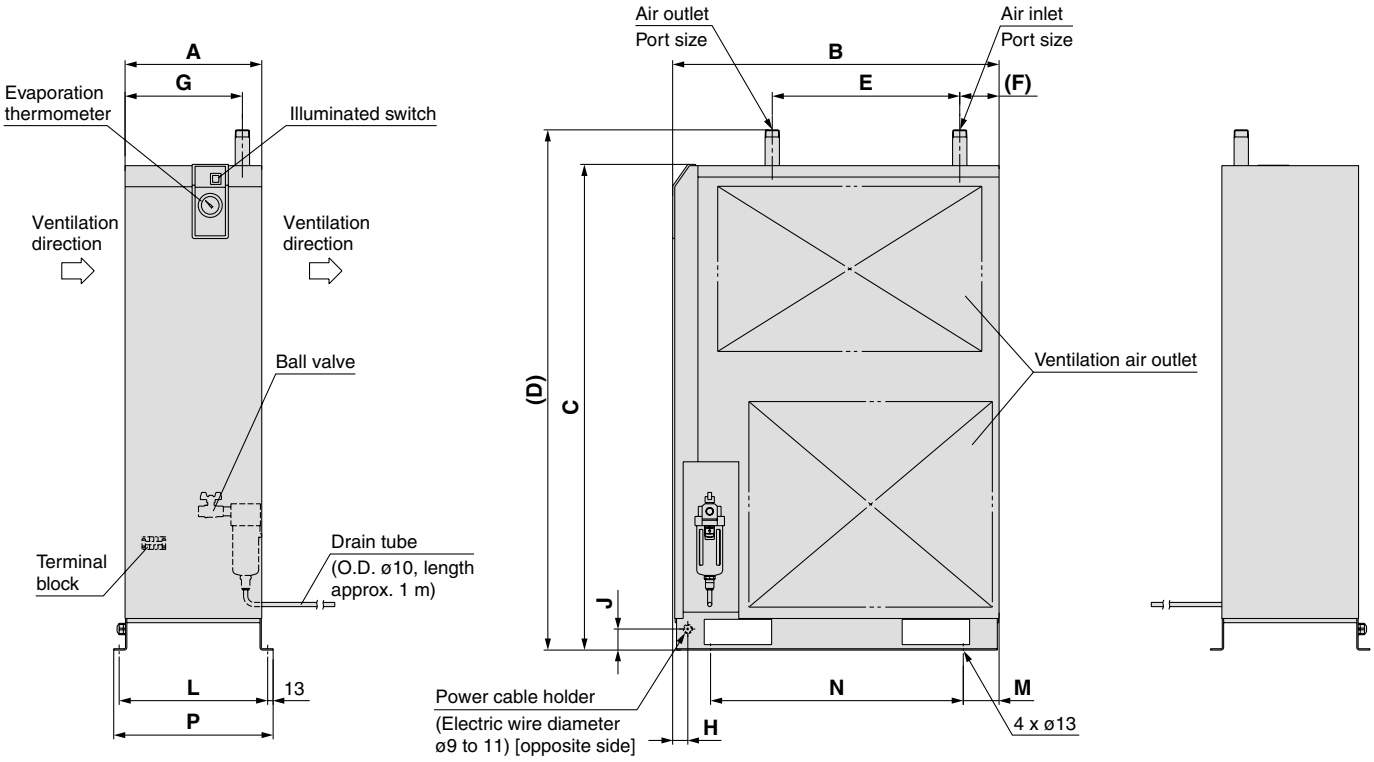
Humid, hot air coming into the air dryer will be cooled down by a heat exchanger. Water condensed at this time will be removed from the air by a drain separator and drained out automatically. Air separated from the water will be heated by a heat exchanger to obtain the dried air, which goes through to the outlet side.

IDU22E, 37E, 55E, 75E



Dimensions

IDU22E to 75E



Dimensions (mm)

Model	Port size	A	B	C	D	E	F	G	H	J	L	M	N	P
IDU22E	R 1	325	775	1153	1235	445	93	279	46	50	353	85	600	379
IDU37E	R 1 1/2	360	855	1258	1350	550	64	290			388		680	414
IDU55E	R 2	470		1345	1440	530	53	360	30		500	75	700	526
IDU75E				1480	1575					70				

Options 1

Refer to "How to Order" on pages 5, 9, 12, 15, 18 for optional models.

A Option symbol

Cool compressed air output

IDF□E all models

Cool outlet air (10°C) can be supplied.
The air flow with this option is smaller than that of the standard air dryer. (Refer to the below table.) If the air dryer is used out of the scope of the rated specifications or conditions, select a model according to pages 3 and 4 and apply the air flow capacity shown in the tables below to the data E.

Note 1) Perform thermal insulation treatment for pipings and equipment installed after the dryer to prevent the formation of condensation.
Note 2) The option A cannot be used for the IDF120D to 370B and the IDU series due to the construction of the heat exchanger unit.

Air Flow Capacity

Model		IDF1E	IDF2E	IDF3E	IDF4E	IDF6E	IDF8E
Air flow capacity m^3/min (ANR)	50 Hz	0.085	0.12	0.18	0.26	0.32	0.5
	60 Hz	0.1	0.14	0.21	0.29	0.375	0.55

Model		IDF11E	IDF15E1	IDF22E	IDF37E	IDF55E	IDF75E
Air flow capacity m^3/min (ANR)	50 Hz	0.65	1.2	1.7	2.6	3.85	5.35
	60 Hz	0.75	1.3	1.9	3.05	4.5	6.2

(Rated specification/Conditions): Inlet air pressure: 0.7 MPa, Inlet air temperature: 35°C (IDF1E to 37E), 40°C (IDF55E, 75E)
Outlet air temperature: 10°C

C Option symbol

Anti-corrosive treatment for copper tube

IDF, IDU all models

This minimizes the corrosion of the copper and copper alloy parts when the air dryer is used in an atmosphere containing hydrogen sulfide or sulfurous acid gas. (Corrosion cannot be completely prevented.)
Special epoxy coating: Copper tube and copper alloy parts
The coating is not applied on the heat exchanger or around electrical parts, where operation may be affected by the coating.

∗ Corrosion is not covered under warranty.

K Option symbol

Moderate pressure specification (Auto drain bowl: Metal bowl with level gauge)

IDF6E to 37E, IDU3E to 15E1

The maximum operating pressure is 1.6 MPa.
The auto drain is changed from the standard to the moderate pressure specification.
A metal bowl with a level gauge which can confirm the water level is used for the auto drain.

Specifications

1. Maximum operating pressure: 1.6 MPa
2. Dimensions ··· same as standard products

Replacement Parts

Model	Auto drain replacement parts no.	Note
IDF6E to 37E IDU3E to 15E1	IDF-S0086	Assembly of Auto drain: AD48-8-X2110, One-touch fitting: KQ2H10-02S, Insulator

Options 1-2

Refer to "How to Order" on pages 5, 9, 12, 15, 18 for optional models.

L Option symbol

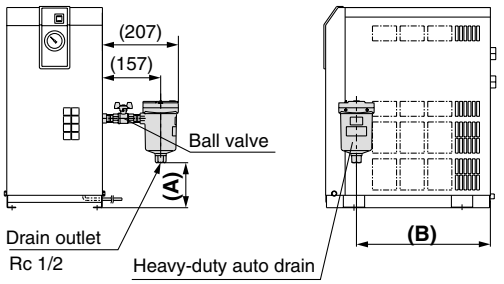
With a heavy-duty auto drain (applicable to moderate pressure)

IDF4E to 75E, IDU3E to 75E

Drainage including dust can also be exhausted.
The float type auto drain used in the standard air dryer is replaced with a heavy-duty auto drain (ADH4000-04).

Max. operating pressure: 1.6 MPa

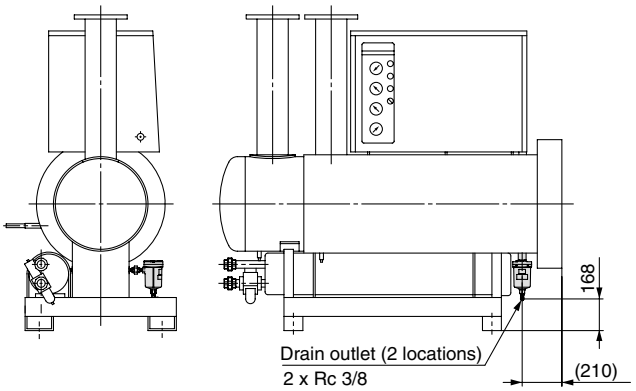
IDF4E to 15E1
IDU3E to 15E1



Note 1) The heavy-duty auto drain and the ball valve are both enclosed in the same shipping package as the main body of the air dryer. The customer is required to mount the parts to the air dryer.
Note 2) The customer will need to supply the fitting (Part no. KQ2L10-04S) and tubing (Part no. TU1065BU) for the drain piping.

Max. operating pressure: 0.97 MPa

IDF370B

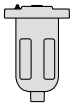
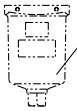


Dimensions

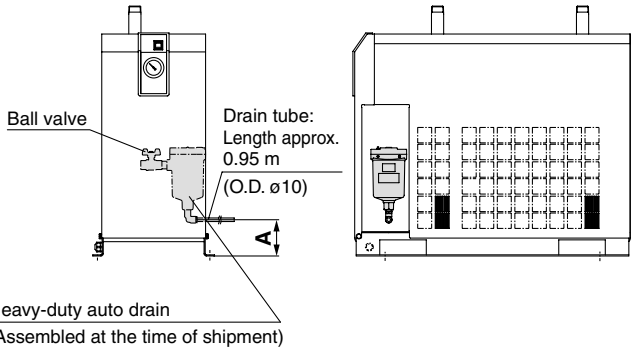
(mm)

Model	A	B
IDF4E	55	348
IDF6E, IDU3E	67	
IDF8E, IDF11E	139	378
IDU4E, IDU6E		
IDU8E, IDU11E	149	
IDF15E1	47	494
IDU15E1		533

Replacement Parts: Heavy-Duty Auto Drain

Model	Replacement parts no. (Description)	Configuration
IDF4E to 15E1 **IDU3E to 15E1** **IDF370B**	ADH4000-04 (Heavy-duty auto drain)	Heavy-duty auto drain
IDF22E to 75E **IDU22E to 75E**	ADH-E400 (Exhaust mechanism replacement kit)	 Exhaust mechanism replacement kit  Housing A mounted unit is used

IDF22E to 75E, IDU22E to 75E



Dimensions

(mm)

Model	A
IDF22E, 37E **IDU22E, 37E**	Approx. 100
IDF55E, 75E **IDU55E**	Approx. 120
IDU75E	Approx. 250

Options 2

Refer to "How to Order" on pages 5, 9, 12, 15, 18 for optional models.

M Option symbol

With a motor type auto drain

Except IDF1E, 2E, 3E

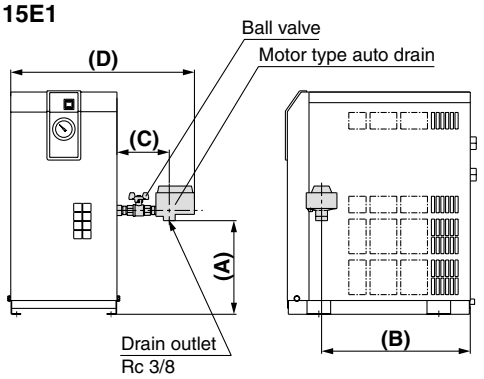
The float type auto drain used in the standard air dryer is replaced with a motor type auto drain (ADM200).

Air Discharge

Operating air pressure	Air discharge without drainage
0.3 MPa	0.006 m^3 per cycle (ANR)
0.5 MPa	0.010 m^3 per cycle (ANR)
0.7 MPa	0.014 m^3 per cycle (ANR)

∗ The motor type auto drain actuates once (for 2 seconds) every one minute.

IDF4E to 15E1
IDU3E to 15E1



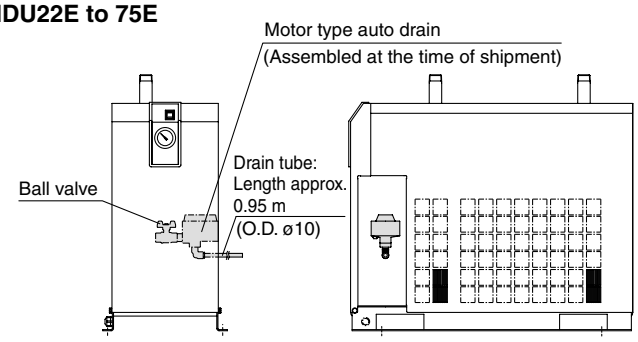
Dimensions (mm)

Model	A	B	C	D
IDF4E	154	348	133	474
IDF6E, IDU3E	166			
IDF8E, 11E	238	378		
IDU4E, 6E				
IDU8E, 11E	288			496
IDF15E1	149	494	146	510
IDU15E1	65	442	137	530

Note 1) The motor type auto drain and the ball valve are both enclosed in the same shipping package as the main body of the air dryer. The customer is required to mount the auto drain to the air dryer.

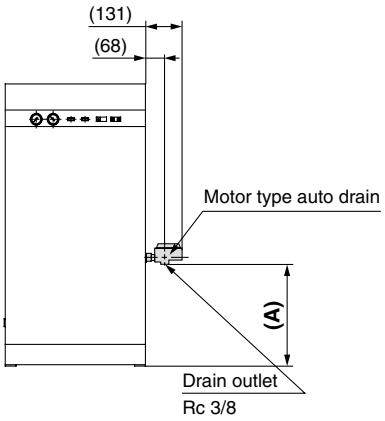
Note 2) The customer will need to supply the fitting (Part no. KQ2L10-03S) and tubing (Part no. TU1065BU) for the drain piping.

IDF22E to 75E
IDU22E to 75E



Note) When a longer drain tube than the one attached is necessary, remove and replace it with a tube prepared by the customer. (After connection with a fitting, the drain may not flow due to a drop in pressure caused by the fitting.)

IDF120D to 240D



Note) The motor type auto drain is enclosed in the same shipping package as the main body of the air dryer. The customer is required to mount the auto drain to the air dryer.

Dimensions (mm)

Model	A
IDF120D	464
IDF150D	464
IDF190D	526
IDF240D	565

Replacement Parts: Motor Type Auto Drain Assembly Note)

Voltage	Replacement parts no.	Note
Single-phase **100 VAC (50 Hz)** **100/110 VAC (60 Hz)**	IDF-S0087	Motor type auto drain: ADM200-041 Plug housing assembly: 173090-2 Receptacle: 173707-1 Rubber plug: Assembly of 172888-2
Single-phase **Three-phase** **200 VAC (50 Hz)** **200/220 VAC (60 Hz)**	IDF-S0090	Motor type auto drain: ADM200-042 Plug housing assembly: 173090-2 Receptacle: 173707-1 Rubber plug: Assembly of 172888-2

Note) Including electric wire with connector on the end.

Options 3

Refer to "How to Order" on pages 5, 9, 12, 15, 18 for optional models.

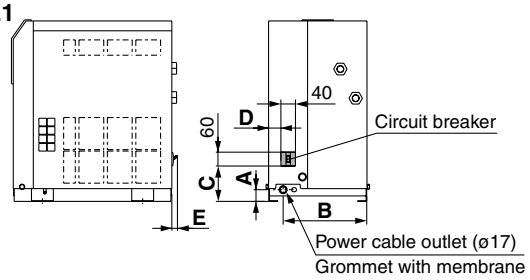
R Option symbol

With a circuit breaker

Except IDF1E, 2E, 3E

The air dryer is equipped with a circuit breaker, reducing the electrical wiring required during installation. (The IDF370B does not include the electrical leakage detection function.)

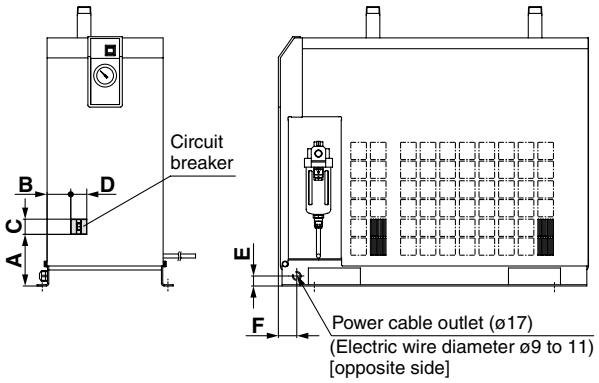
IDF4E to 15E1
IDU3E to 15E1



Dimensions (mm)

Model	A	B	C	D	E
IDF4E, 6E, 8E, 11E	32	230	97	34	15
IDF15E1	43	258	102	82	—
IDU3E, 4E, 6E	32	230	97	34	15
IDU8E	42		100	37	—
IDU11E				75	
IDU15E1	43	258		84	

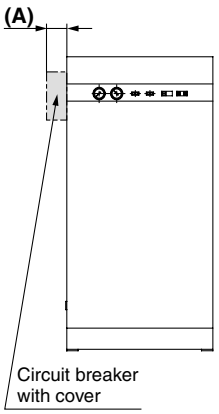
IDF22E to 75E
IDU22E to 75E



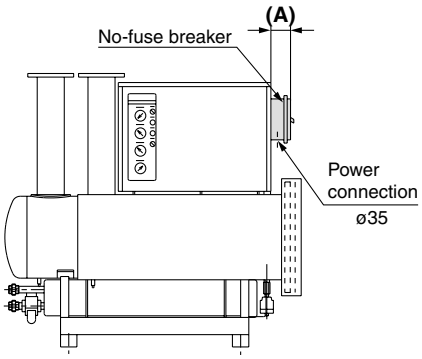
Dimensions (mm)

Model	A	B	C	D	E	F
IDF22E-20	125	59	60	40	25	46
IDF37E-20						
IDF22E-30		39		60		
IDF37E-30						
IDF55E-30	148	81			50	36
IDF75E-30	133	73				
IDU22E-30	151	74	60	60	50	46
IDU37E-30	146	122				
IDU55E-30	148	55				36
IDU75E-30	166	73			70	

IDF120D to 240D



IDF370B



Dimensions (mm)

Model	A
IDF120D	69
IDF150D	94
IDF190D	95
IDF240D	
IDF370B	156

Breaker Capacity and Sensitivity Current

Voltage	Model	Breaker capacity	Sensitivity current
100 V type	**IDF4E-10, IDF6E-10 IDF8E-10, IDF11E-10, IDF15E1-10**	10 A	30 mA
	IDU3E-10, IDU4E-10, IDU6E-10 IDU8E-10, IDU11E-10, IDU15E1-10		
200 V type	**IDF4E-20, IDF6E-20 IDF8E-20, IDF11E-20**	5 A	
	IDU3E-20, IDU4E-20 IDU6E-20, IDU8E-20, IDU11E-20		
	IDF15E1-20, IDF22E-20, IDF37E-20 IDU15E1-20 IDF22E-30, IDF37E-30 IDF55E-30 IDU22E-30, IDU37E-30, IDU55E-30	10 A	
	IDF75E-30, IDU75E-30	15 A	
	IDF120D	30 A	
	IDF150D	45 A	
	IDF190D	60 A	
	IDF240D	75 A	
	IDF370B	80 A	—

Options 4

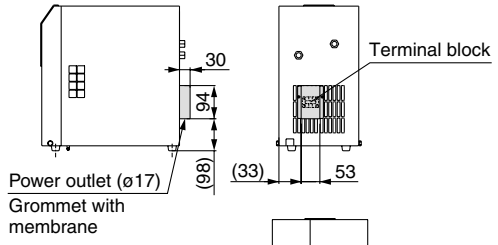
Refer to "How to Order" on pages 5, 9, 12, 15, 18 for optional models.

S Option symbol: Power supply terminal block connection

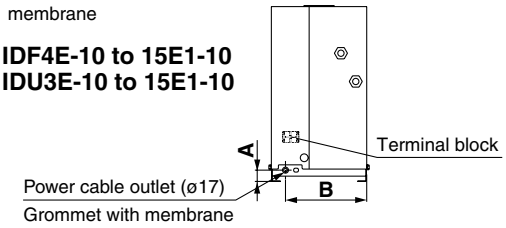
IDF1E-10 to 15E1-10, IDU3E-10 to IDU15E1-10

The option allows the connection of a power cable to a terminal block.
200 V specification is equipped as standard.

IDF1E-10 to 3E-10



IDF4E-10 to 15E1-10
IDU3E-10 to 15E1-10



Dimensions (mm)

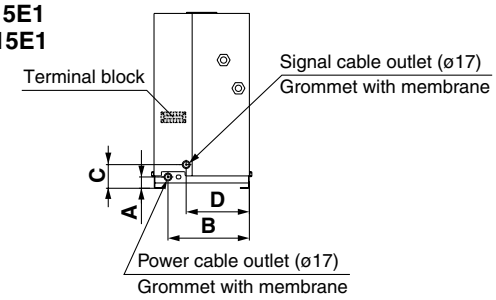
Model	A	B
IDF4E, 6E, 8E, 11E	32	230
IDF15E1	43	258
IDU3E, 4E, 6E	32	230
IDU8E, 11E	42	230
IDU15E1	43	258

T Option symbol: With a terminal block for power supply, operating/error signal and remote operation

IDF4E to 15E1, IDU3E to 15E1

Besides terminals for the power supply, terminals for the operating signal and the error signal are also available. (No-voltage contact)
Also, in the case of remote control, operate it from the power supply side while the air dryer switch remains ON.

IDF4E to 15E1
IDU3E to 15E1



Contact capacity: Operating signal ... 220 VAC, 6 A 24 VDC, 6 A
Error signal ... 220 VAC, 0.5 A

Minimum current value: 24 V, 300 mA (AC/DC) for operating and error signals

Note) Be sure to confirm the electric circuits with the drawings or operating manual before using the operating and error signals.

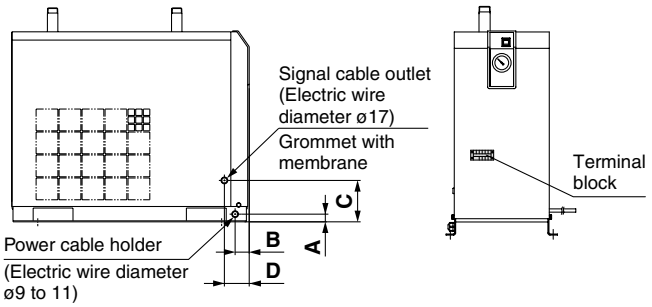
Dimensions (mm)

Model	A	B	C	D
IDF4E, 6E, 8E, 11E	32	230	67	179
IDF15E1	43	258	77	158
IDU3E, 4E, 6E	32	230	67	179
IDU8E, 11E	42	230	77	136
IDU15E1	43	258	77	158

T Option symbol: With a terminal block for power supply, operating/error signal and remote operation

IDF22E to 75E, IDU22E to 75E

IDF22E to 75E, IDU22E to 75E



Contact capacity: Operating signal ... 220 VAC, 5 A 24 VDC, 5 A
Error signal ... 220 VAC, 1 A 24 VDC, 0.5 A

Minimum current value: 20 V, 5 mA (AC/DC) for operating and error signals

Dimensions (mm)

Model	A	B	C	D
IDF22E, 37E	25	46	135	81
IDF55E, 75E	50	36	207	
IDU22E, 37E	50	46	166	
IDU55E		36	230	
IDU75E	70		242	

Options 5

Refer to "How to Order" on pages 5, 9, 12, 15, 18 for optional models.

V — With a timer controlled solenoid valve type auto drain (applicable to moderate pressure)

Option symbol | **IDU3E to 75E**

Drainage is discharged by controlling a solenoid valve with a timer.
A strainer for solenoid valve protection and a stop valve are also included.

Maximum operating pressure: 1.6 MPa

∗ The timer controlled solenoid valve actuates once (for 0.5 seconds) every 30 seconds.

Replacement Parts

Model	Part no.	Note
IDU3E to 37E-23	IDF-S0198	230 VAC
IDU55E, 75E-23	IDF-S0302	

W — Water-cooled condenser

Option symbol | **IDF120D to 240D**

It can be used in a high temperature environment (max. 43°C) without decreasing air flow capacity. It can also be used in an enclosed environment without increasing the ambient temperature. This option is equipped with the IDF370B as standard.

Model	IDF120D	IDF150D	IDF190D	IDF240D
Condenser	Shell and coil system			
Cooling water flow rate (ℓ/min) Note 1)	50	65	80	90
Cooling tower performance (RT) Note 2)	5	7.5	7.5	7.5
Water flow regulator	Pressure type automatic water supply valve			
Port size for water side	R 1			

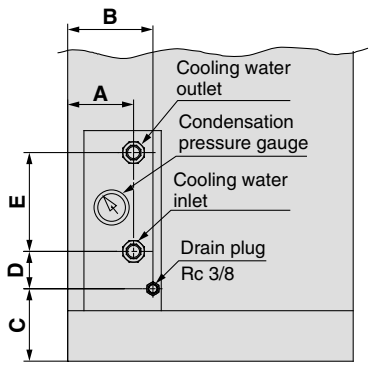
Note 1) Value with rated load when cooling water inlet temperature is 32°C.
Note 2) Calculated at 1 RT = 3300 kcal/h

Dimensions

(mm)

Model	A	B	C	D	E
IDF120D IDF150D	180	250	160	90	225
IDF190D IDF240D	180	250	160	48	273

IDF120D to 240D



Z — Refrigerant R407C

Option symbol | **IDF370B**

The refrigerant for this product has been changed to R407C.
The refrigerant used for standard specification is R22.

Optional Accessories

Specifications

Description	Features	Specifications	Applicable air dryer	Dimensions
Separately installed power transformer Note 1), 2)	Power supply and voltage for those other than the standard	Max. ambient temperature 40°C (Relative humidity 85% or less)	IDF1E to 10 to IDF15E1-10, IDF22E-20/30 IDF37E-20/30, IDF55E-30, IDF75E-30 IDU3E-10 to 15E1-10, IDU22E to 75E-30 IDF120D to 240D-3, IDF370B-603	Page 29, 30
Dedicated base for separately installed power transformer Note 2) Separately installed power transformer is not attached. Order separately.	For integrating the separately installed power transformer and the air dryer	—	IDF4E to 15E1-10 IDF22E-20/30, IDF37E-20/30 IDF55E-30, IDF75E-30 IDU3E to 15E1-10	Page 31
Dust-protecting filter set	For preventing a decline in the performance of air dryers, even in a dusty atmosphere	Max. ambient temperature 40°C	IDF1E to 75E IDF120D to 240D IDU3E to 75E	Page 32
Bypass piping set	Easy bypass piping (connect this set to the air dryer), allowing substantial reduction in the installation time.	Note 3) Max. operating pressure 1.0 MPa Max. operating temperature IDF: 60°C IDU: 80°C	IDF1E to 75E IDU3E to 75E	Page 33, 34
Foundation bolt set	For fixing the air dryer to the foundations. Easy to secure by striking the axle.	Stainless steel	IDF4E to 75E IDU3E to 75E	Page 34
Piping adapter	For converting the thread type of an IN/OUT fitting for air dryers	Copper alloy	IDF1E to 75E IDU3E to 75E	
Mounting base adapter	For ensuring conversion to the former models' (IDF22C and 37C) air piping	—	IDF22E, 37E	Page 35
Conversion piping set	[When bypass piping is already in place] For ensuring conversion to the former models' (IDF6D to 15C) air piping	Note 3) Max. operating pressure 1.0 MPa Max. operating temperature 60°C	IDF6E to 15E1	
Conversion bypass piping set	[When there is no bypass piping] For ensuring conversion to the former models' (IDF6D to 15C) air piping	Note 3) Max. operating pressure 1.0 MPa Max. operating temperature 60°C	IDF6E to 15E1	Page 36

Note 1) When using a power transformer for the IDF1E to 15E1 and IDU3E to 15E1, select the air dryer of 100 V.
Note 2) When using a power transformer for the IDF120D to 240D, built-in transformer type is also available. (Refer to "How to Order" on page 12.)
Note 3) Not applicable to the moderate pressure specification. Prepare a bypass, conversion or conversion bypass piping set suitable for the specification.

Optional Accessories

How to Order

[Separately installed power transformer]

Single-phase type

IDF — TR 500 — 2

Capacity

Symbol	Applicable air dryer	Capacity
500	IDF1E-10 to IDF8E-10 IDU3E-10, IDU4E-10, IDU8E-10	500 VA
1000	IDF11E-10, IDF15E1-10 IDU6E-10, IDU11E-10, IDU15E1-10	1 kVA
2000	IDF22E-20, IDF37E-20	2 kVA

Power supply voltage

Symbol	Inlet voltage	Outlet voltage	Type
1	110 VAC (50 Hz) 110 to 120 VAC (60 Hz)	100 VAC (50 Hz) 100, 110 VAC (60 Hz)	Single-phase
2	200, 220, 230, 240 VAC (50 Hz) 200 to 260 VAC (60 Hz)		
3	380, 400, 415 VAC (50 Hz) 380 to 420 VAC (60 Hz)		
4	420, 440, 480 VAC (50 Hz) 420 to 520 VAC (60 Hz)		
9	220 VAC (50 Hz) 220 to 240 VAC (60 Hz)	200 VAC (50 Hz) 200, 220 VAC (60 Hz)	Single-phase
10	380, 400, 415 VAC (50 Hz) 380 to 400, 400 to 415, 415 to 440 VAC (60 Hz)		
11	440, 460 VAC (50 Hz) 440 to 460, 460 to 500 VAC (60 Hz)		

Note) Refer to pages 29 and 30 for dimensions.

Three-phase type

IDF — TR 1700 — 5

Capacity

Symbol	Applicable air dryer	Capacity
1700	IDF22E-30, IDF37E-30 IDU22E-30, IDU37E-30	1.7 kVA
4000	IDF55E-30, IDF75E-30 IDU55E-30, IDU75E-30	4 kVA
7000	IDF120D	7 kVA
9000	IDF150D	9 kVA
14000	IDF190D, 240D	14 kVA
18000	IDF370B	18 kVA

Power supply voltage

Symbol	Inlet voltage	Outlet voltage	Type
5	220 VAC (50 Hz) 220 to 240 VAC (60 Hz)	200 VAC (50 Hz) 200, 220 VAC (60 Hz)	Three-phase
6	380, 400, 415 VAC (50 Hz) 380 to 440 VAC (60 Hz)		
7	440, 460 VAC (50 Hz) 440 to 500 VAC (60 Hz)		
8	220, 240, 380, 400, 415, 440 VAC (50/60 Hz)	200 VAC (50/60 Hz)	

Note) Refer to page 30 for dimensions.

[Dedicated base for separately installed power transformer]

IDF — TB 403

Size

Symbol	Applicable air dryer
403	IDF4E to 11E, IDU3E to 6E
404	IDF15E1
405	IDF22E
406	IDF37E
409	IDF55E, 75E

IDU — TB 407

Size

Symbol	Applicable air dryer
407	IDU8E, 11E
408	IDU15E1

Note) Not available for the IDF1E to 3E, IDU22E, 37E, 55E and 75E.
Refer to page 31 for dimensions.

[Dust-protecting filter set]

IDF — FL 201

Applicable air dryer

Symbol	Applicable air dryer
200 Note)	IDF1E, 2E
201 Note)	IDF3E
202	IDF4E
203	IDF6E, IDU3E
204	IDF8E, IDU4E
205	IDF11E, IDU6E
206	IDF15E1
207	IDF22E
208	IDF37E
213	IDF55E
214	IDF75E

IDF — FL 120 D

Applicable air dryer

Symbol	Applicable air dryer
120	IDF120D
150	IDF150D
190	IDF190D
240	IDF240D

IDU — FL 210

Applicable air dryer

Symbol	Applicable air dryer
210	IDU8E
211	IDU11E
212	IDU15E1
215	IDU22E
216	IDU37E
217	IDU55E
218	IDU75E

Note) In the case of the option S, model number will be different. Please consult with SMC separately.
Refer to page 32 for dimensions.

How to Order

[Bypass piping set (Rc, R thread)]

IDF—BP 302

Applicable air dryer

Symbol	Applicable air dryer	Thread type
300	IDF1E	Rc
301	IDF2E	
302	IDF3E	
303	IDF4E	
304	IDF6E to 11E	
316	IDF15E1	
317	IDF22E	R
318	IDF37E	
325	IDF55E	
	IDF75E	

Note) Not applicable to the moderate pressure specification (maximum operating pressure 1.6 MPa). Prepare a bypass piping set suitable for the specification by the customer.

IDU—BP 305

Applicable air dryer

Symbol	Applicable air dryer
305	IDU3E
306	IDU4E
307	IDU6E
320	IDU8E, 11E
322	IDU15E1
336	IDU22E
337	IDU37E
338	IDU55E, 75E

Note) Refer to pages 33 and 34 for bypass piping set dimensions.

[Foundation bolt set]

IDF—AB 500

Applicable air dryer

Symbol	Applicable air dryer
500	IDF4E to 75E
	IDU3E to 15E1
501	IDU22E to 75E

Note) Refer to page 34 for dimensions.

[Piping adapter]

IDF—AP 601

Applicable air dryer

Symbol	Thread type and port size		Applicable air dryer
	Male thread **A** side	Female thread **B** side	
601	R 1/2	NPT 1/2	IDF4E, IDU4E
603	R 3/4	NPT 3/4	IDF6E to 11E, IDU6E to 11E
604	NPT 1	Rc 1	IDF22E, IDU22E
605	R 1	NPT 1	IDF15E1, IDU15E1
606	NPT 1 1/2	Rc 1 1/2	IDF37E, IDU37E
607	NPT 2	Rc 2	IDF55E, 75E, IDU55E, 75E
609	R 3/8	NPT 3/8	IDF1E to 3E, IDU3E

Note) Refer to page 34 for dimensions.

[Mounting base adapter]

Applicable to the IDF22E and 37E.

Part no.	Applicable air dryer
IDF-S0189	IDF22E
IDF-S0147	IDF37E

Note) Refer to page 35 for dimensions.

[Conversion piping set/Conversion bypass piping set]

Applicable to the IDF6E to 15E1.
Select “conversion piping set” when bypass piping is already in place, and “conversion bypass piping set” when there is no bypass piping.

Part no.		Applicable air dryer
Conversion piping set	Conversion bypass piping set	
IDF-S0186	**IDF-S0183**	IDF6E
IDF-S0203	**IDF-S0202**	IDF8E
IDF-S0187	**IDF-S0184**	IDF11E
IDF-S0188	**IDF-S0185**	IDF15E1

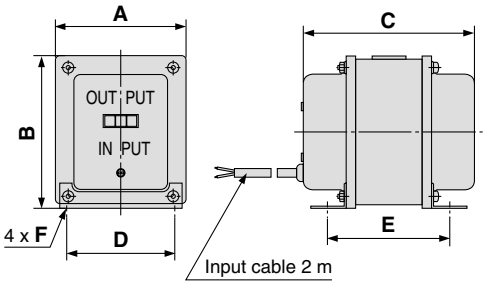
Note) Refer to pages 35 and 36 for dimensions.

Optional Accessories

Specifications/Dimensions

[Separately installed power transformer]

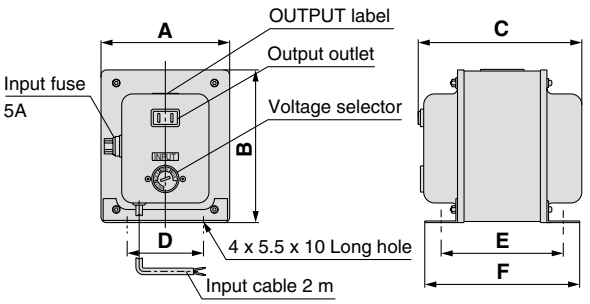
IDF-TR□-1



Specifications/Dimensions (mm)

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	A	B	C	D	E	F	Weight
IDF-TR500-1	IDF1E-10 to 8E-10 IDU3E-10, 4E-10, 8E-10	500 VA	Single-phase Single-turn	110 VAC (50 Hz) 110 to 120 VAC (60 Hz)	100 VAC (50 Hz) 100, 110 VAC (60 Hz)	78	94	100	64	75	4.2 x 7 (Long hole)	1.5 kg
IDF-TR1000-1	IDF11E-10, 15E1-10 IDU6E-10, 11E-10, 15E1-10	1 kVA				104	122	134	75	114	4.2 x 9 (Long hole)	4 kg

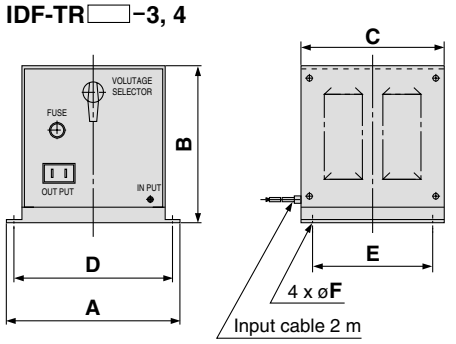
IDF-TR□-2



Specifications/Dimensions (mm)

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	A	B	C	D	E	F	Weight
IDF-TR500-2	IDF1E-10 to 8E-10 IDU3E-10, 4E-10, 8E-10	500 VA	Single-phase Single-turn	200, 220 230, 240 VAC (50 Hz) 200 to 260 VAC (60 Hz)	100 VAC (50 Hz) 100, 110 VAC (60 Hz)	118	140	163	70	112	142	6 kg
IDF-TR1000-2	IDF11E-10, 15E1-10 IDU6E-10, 11E-10, 15E1-10	1 kVA						208	90	157	187	10 kg

IDF-TR□-3, 4



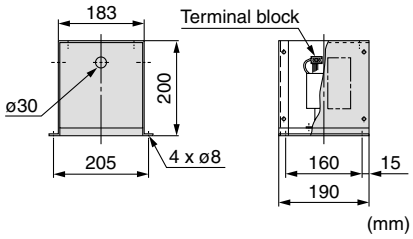
Specifications/Dimensions (mm)

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	A	B	C	D	E	F	Weight
IDF-TR500-3	IDF1E-10 to 8E-10 IDU3E-10, 4E-10, 8E-10	500 VA	Single-phase Single-turn	380, 400, 415 VAC (50 Hz) 380 to 420 VAC (60 Hz)	100 VAC (50 Hz) 110 VAC (60 Hz)	230	207	190	210	160	9	15 kg
IDF-TR1000-3	IDF11E-10, 15E1-10 IDU6E-10, 11E-10, 15E1-10	1 kVA										
IDF-TR500-4	IDF1E-10 to 8E-10 IDU3E-10, 4E-10, 8E-10	500 VA		420, 440, 480 VAC (50 Hz) 420 to 520 VAC (60 Hz)								22 kg
IDF-TR1000-4	IDF11E-10, 15E1-10 IDU6E-10, 11E-10, 15E1-10	1 kVA										

Specifications/Dimensions

[Separately installed power transformer]

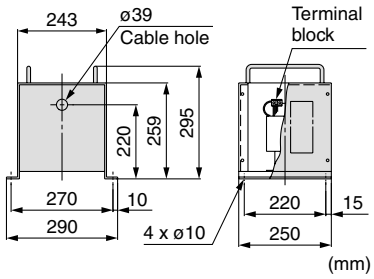
IDF-TR1700-5



Specifications

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	Weight
IDF-TR1700-5	IDF22E-30 IDF37E-30 IDU22E-30 IDU37E-30	1.7 kVA	Three-phase Single-turn	220 VAC (50 Hz) 220 to 240 VAC (60 Hz)	200 V (50 Hz) 200, 220 V (60 Hz)	9 kg

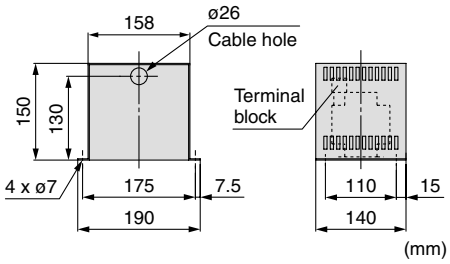
IDF-TR1700-6, 7



Specifications

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	Weight
IDF-TR1700-6	IDF22E-30 IDF37E-30 IDU22E-30 IDU37E-30	1.7 kVA	Three-phase Single-turn	380, 400, 415 VAC (50 Hz) 380 to 400, 400 to 415, 415 to 440 VAC (60 Hz)	200 V (50 Hz) 200, 220 V (60 Hz)	18 kg
IDF-TR1700-7				440, 460 VAC (50 Hz) 440 to 460, 460 to 500 VAC (60 Hz)		

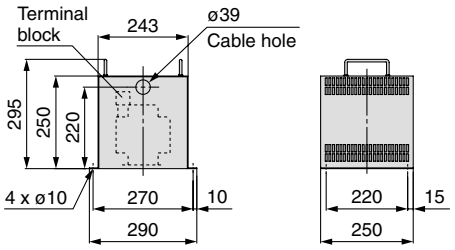
IDF-TR2000-9



Specifications

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	Weight
IDF-TR2000-9	IDF22E-20 IDF37E-20	2 kVA	Single-phase Single-turn	220 VAC (50 Hz) 220 to 240 VAC (60 Hz)	200 VAC (50 Hz) 200, 220 VAC (60 Hz)	5 kg

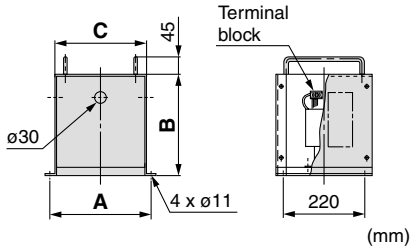
IDF-TR2000-10, 11



Specifications

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	Weight
IDF-TR2000-10	IDF22E-20 IDF37E-20	2 kVA	Single-phase Single-turn	380, 400, 415 VAC (50 Hz) 380 to 400, 400 to 415, 415 to 440 VAC (60 Hz)	200 VAC (50 Hz) 200, 220 VAC (60 Hz)	20 kg
IDF-TR2000-11				440, 460 VAC (50 Hz) 440 to 460, 460 to 500 VAC (60 Hz)		

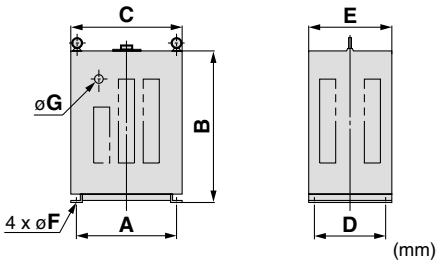
IDF-TR4000-5, 6, 7



Specifications/Dimensions

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	A	B	C	Weight
IDF-TR4000-5	IDF55E-30 IDF75E-30 IDU55E-30 IDU75E-30	4 kVA	Three-phase Single-turn	220 V (50 Hz) 220 to 240 V (60 Hz)	200 V (50 Hz) 200, 220 V (60 Hz)	275	259	240	14 kg
IDF-TR4000-6				380, 400, 415 V (50 Hz) 380 to 400, 400 to 415, 415 to 440 V (60 Hz)	200 V (50 Hz) 200, 220 V (60 Hz)	355	299	320	35 kg
IDF-TR4000-7				440, 460 V (50 Hz) 440 to 460, 460 to 500 V (60 Hz)	200 V (50 Hz) 200, 220 V (60 Hz)	355	299	320	42 kg

IDF-TR□-8



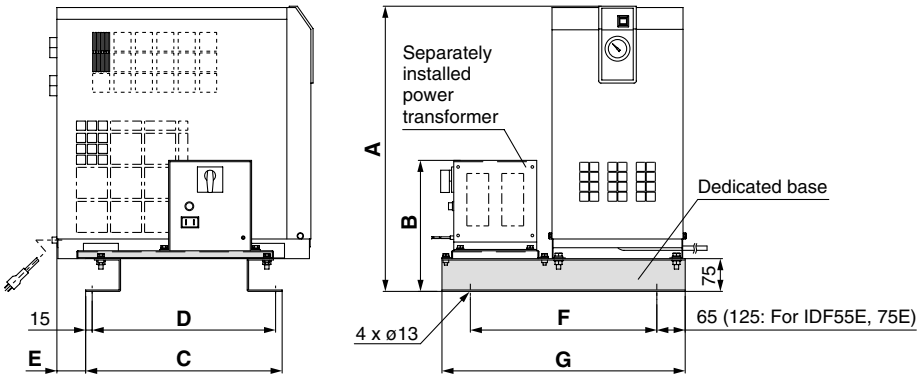
Specifications/Dimensions

Part no.	Applicable air dryer	Capacity	Type	Inlet voltage	Outlet voltage	A	B	C	D	E	F	G	Weight
IDF-TR7000-8	IDF120D	7 kVA	Three-phase Double-turn	220, 240, 380, 400, 415, 440 V (50/60 Hz)	200 V (50/60 Hz)	360	540	400	260	300	11	30	94 kg
IDF-TR9000-8	IDF150D	9 kVA				400	650	450	300	350	13	40	109 kg
IDF-TR14000-8	IDF190D, 240D	14 kVA				400	650	450	300	350	13	40	152 kg
IDF-TR18000-8	IDF370B	18 kVA				400	650	450	300	350	13	40	179 kg

Optional Accessories

Dimensions

[Dedicated base for separately installed power transformer]
IDF4E to 75E
IDU3E to 15E1



IDF-TB□/Dimensions

(mm)

Part no.	Applicable air dryer	Applicable transformer	A	B	C	D	E	F	G	Unit weight (kg)	Reference weight (including air dryer and transformer) (kg)
IDF-TB403	IDF4E-10	IDF-TR500-1	573	171	345	315	45	385	515	6	29.5
		IDF-TR500-2		217							34
		IDF-TR500-3		284							43
		IDF-TR500-4									50
	IDF6E-10 IDU3E-10	IDF-TR500-1		171							30.5
		IDF-TR500-2		217							35
		IDF-TR500-3		284							44
		IDF-TR500-4									51
	IDF8E-10 IDU4E-10	IDF-TR500-1	643	171	370	340					34.5
		IDF-TR500-2		217							39
		IDF-TR500-3		284							48
		IDF-TR500-4									55
	IDF11E-10 IDU6E-10	IDF-TR1000-1		199							38
		IDF-TR1000-2		217							44
		IDF-TR1000-3		284							49
		IDF-TR1000-4									56
IDF-TB404	IDF15E1-10	IDF-TR1000-1	653	215	450	420	66	427	557	7	57
		IDF-TR1000-2		233							63
		IDF-TR1000-3		300							68
		IDF-TR1000-4									75
IDF-TB405	IDF22E-30	IDF-TR1700-5	773	300	630	600	70	675	805	12	75
		IDF-TR1700-6, 7		352							84
	IDF22E-20	IDF-TR2000-9		243							71
		IDF-TR2000-10, 11		343							86
IDF-TB406	IDF37E-30	IDF-TR1700-5		300	710	680				13	84
		IDF-TR1700-6, 7		352							93
	IDF37E-20	IDF-TR2000-9		243							80
		IDF-TR2000-10, 11		343							95
IDF-TB409	IDF55E-30	IDF-TR4000-5	943	397	730	750	60		925	15	129
		IDF-TR4000-6		437							150
		IDF-TR4000-7									157
	IDF75E-30	IDF-TR4000-5	1043	397							145
		IDF-TR4000-6		437							166
		IDF-TR4000-7									173

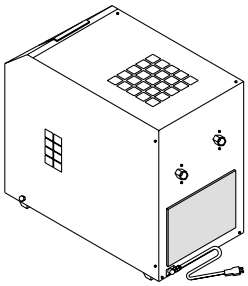
IDU-TB□/Dimensions

(mm)

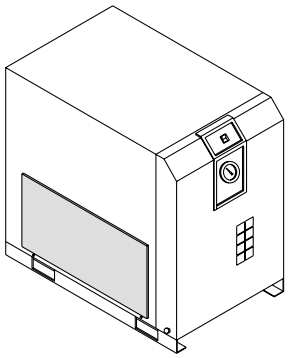
Part no.	Applicable air dryer	Applicable transformer	A	B	C	D	E	F	G	Unit weight (kg)	Reference weight (including air dryer and transformer) (kg)
IDU-TB407	IDU8E-10	IDF-TR500-1	934	171	370	340	45	475	605	6	51.5
		IDF-TR500-2		217							56
		IDF-TR500-3		284							65
		IDF-TR500-4									72
	IDU11E-10	IDF-TR1000-1	984	199							57
		IDF-TR1000-2		217							63
		IDF-TR1000-3		284							68
		IDF-TR1000-4									75
IDU-TB408	IDU15E1-10	IDF-TR1000-1	1035	215	540	510	31	487	617	10	85
		IDF-TR1000-2		233							91
		IDF-TR1000-3		300							96
		IDF-TR1000-4									103

Dimensions

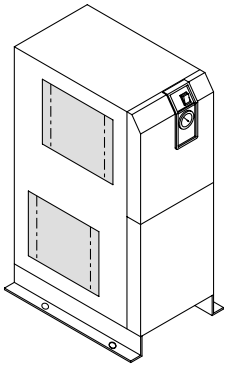
[Dust-protecting filter set]



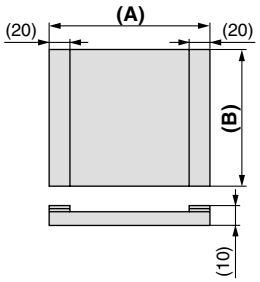
(IDF-FL200, 201)



(IDF-FL202 to 214)



(IDU-FL210 to 218)



Dimensions (mm)

Part no.	Applicable air dryer	A	B	Weight (g)
IDF-FL200	IDF1E, 2E	220	150	20
IDF-FL201	IDF3E		200	30
IDF-FL202	IDF4E	310	195	45
IDF-FL203	IDF6E, IDU3E	375		55
IDF-FL204	IDF8E, IDU4E	340	265	70
IDF-FL205	IDF11E, IDU6E	375		75
IDF-FL206	IDF15E1	310	270	70
IDF-FL207	IDF22E	420	315	100
IDF-FL208	IDF37E	550	365	140
IDF-FL213	IDF55E	720	400	175
IDF-FL214	IDF75E	610	560	190

∗ A filter set for the IDF-FL200 to 214 consists of 1 filter.

Dimensions (mm)

Part no.	Applicable air dryer	A	B
IDF-FL120D	IDF120D	360	420
		440	420
IDF-FL150D	IDF150D	360	420
		440	420
IDF-FL190D	IDF190D	250	480
		750	480
IDF-FL240D	IDF240D	440	670
		600	670

∗ A filter set for the IDF-FL120D to 240D consists of 4 filters.

Dimensions (mm)

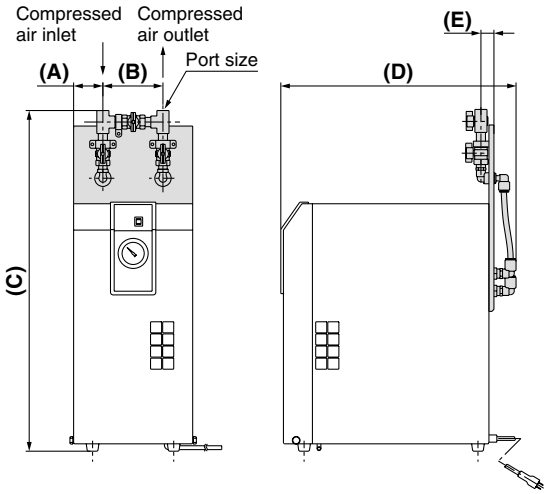
Part no.	Applicable air dryer	A	B	Weight (g)
IDU-FL210	IDU8E	375	265	75
		375	265	75
IDU-FL211	IDU11E	375	265	75
		360	320	90
IDU-FL212	IDU15E1	310	270	70
		440	375	120
IDU-FL215	IDU22E	420	315	100
		555	415	170
IDU-FL216	IDU37E	550	365	140
		580	540	230
IDU-FL217	IDU55E	720	400	175
		735	515	265
IDU-FL218	IDU75E	610	560	190
		735	515	265

∗ A filter set for the IDU-FL210 to 212, 215 to 218 consists of 2 filters.

Optional Accessories

Dimensions

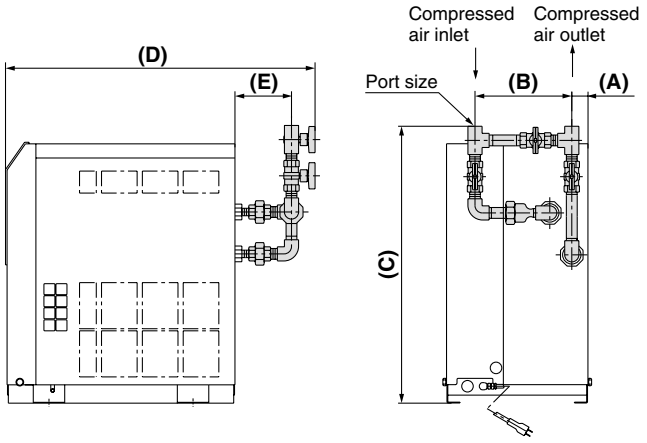
[Bypass piping set]
IDF1E to 3E



Dimensions (mm)

Part no.	Applicable air dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDF-BP300	IDF1E	3/8	56	114	549	440	21	1.5
IDF-BP301	IDF2E				628	443		1.6
IDF-BP302	IDF3E				642	445		

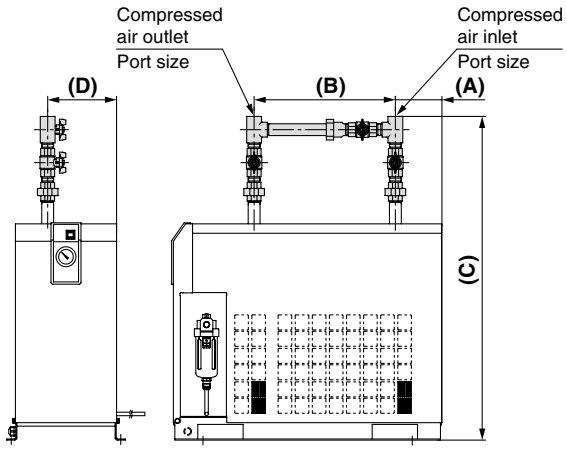
IDF4E to 15E1
IDU3E to 6E



Dimensions (mm)

	Part no.	Applicable air dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDF	**IDF-BP303**	IDF4E	1/2	31	175	531	595	110	2.3
	IDF-BP304	IDF6E	3/4		187	555	617	129	3.3
		IDF8E				627	647		
		IDF11E							
	IDF-BP316	IDF15E1	1	41	210	710	774	136	5.3
IDU	**IDU-BP305**	IDU3E	3/8	31	202	506	572	100	1.6
	IDU-BP306	IDU4E	1/2		175	603	625	110	2.3
	IDU-BP307	IDU6E	3/4		187	627	647	129	3.3

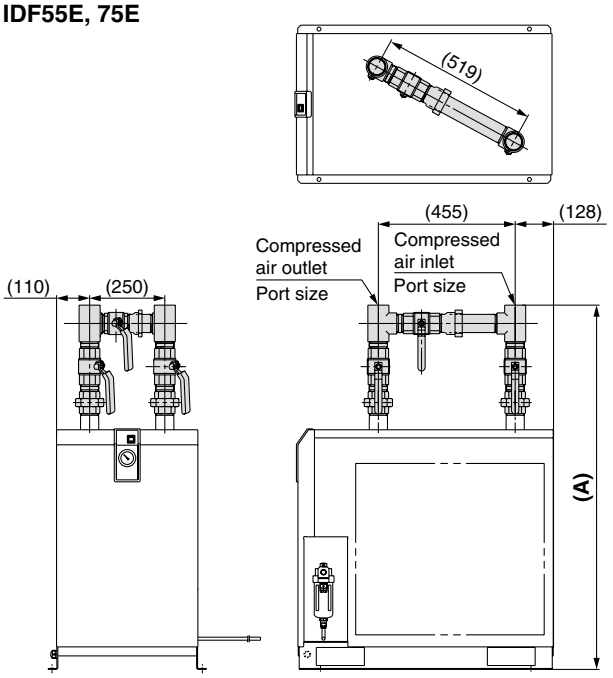
IDF22E, 37E
IDU22E to 75E



Dimensions (mm)

	Part no.	Applicable air dryer	Port size Rc	A	B	C	D	Weight (kg)
IDF	**IDF-BP317**	IDF22E	1	134	405	928	198	4.4
	IDF-BP318	IDF37E	1 1/2			980		7.7
IDU	**IDU-BP336**	IDU22E	1	93	445	1465	46	4.5
	IDU-BP337	IDU37E	1 1/2	64	550	1635	70	8.0
	IDU-BP338	IDU55E	2	53	530	1783	110	12.3
		IDU75E				1918		

IDF55E, 75E

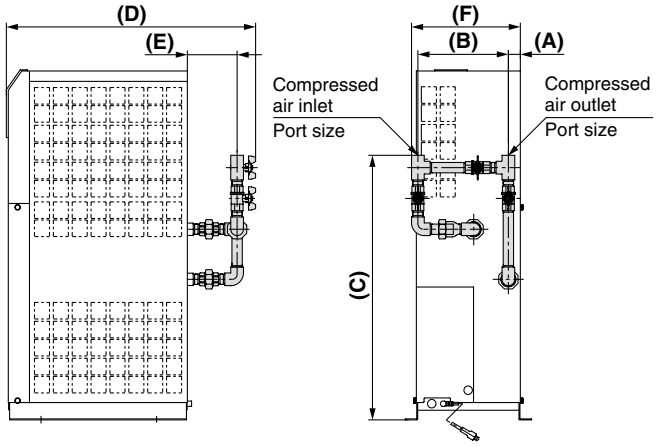


Dimensions (mm)

Part no.	Applicable air dryer	Port size Rc	A	Weight (kg)
IDF-BP325	IDF55E	2	1191	12.3
	IDF75E		1291	

Dimensions

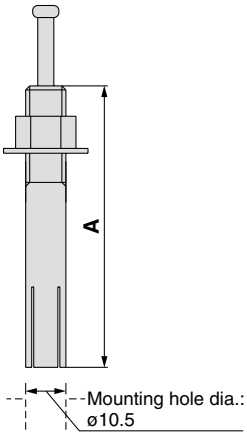
[Bypass piping set]
IDU8E to 15E1



Dimensions (mm)

Part no.	Applicable air dryer	Port size Rc	A	B	C	D	E	Weight (kg)
IDU-BP320	IDU8E	3/4	31	210	687	647	129	3.6
	IDU11E							
IDU-BP322	IDU15E1	1	79		745	791	136	5.3

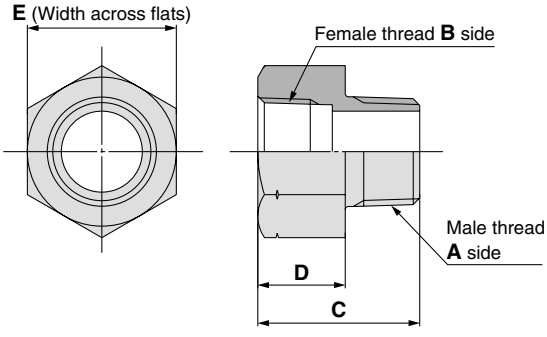
[Foundation bolt set]



Dimensions (mm)

Part no.	Applicable air dryer	Nominal thread size	Material	Number of 1 set	A
IDF-AB500	IDF4E to 75E	M10	Stainless steel	4	50
	IDU3E to 15E1				
IDF-AB501	IDU22E to 75E				70

[Piping adapter]



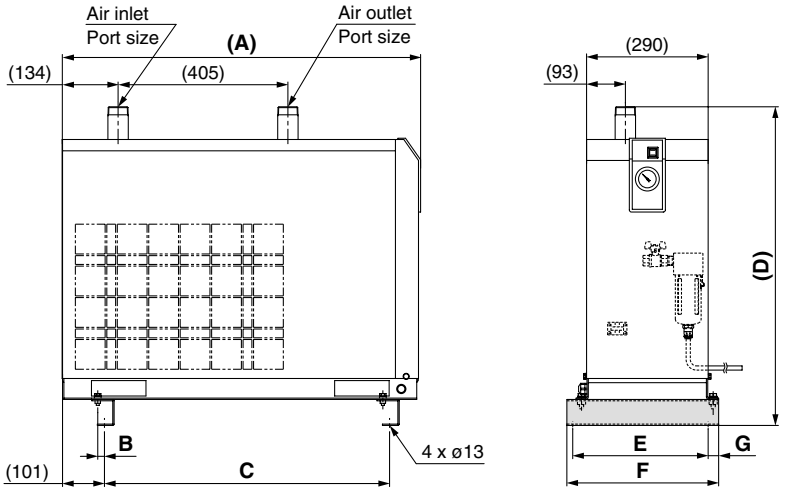
Dimensions (mm)

Part no.	Thread type and port size		Applicable air dryer	C	D	E	Material	Number of 1 set
	Male thread **A** side	Female thread **B** side						
IDF-AP601	R 1/2	NPT 1/2	IDF4E IDU4E	38	23	26	Copper alloy	2
IDF-AP603	R 3/4	NPT 3/4	IDF6E to 11E IDU6E to 11E	43	23	32		
IDF-AP604	NPT 1	Rc 1	IDF22E, IDU22E	50	27	46		
IDF-AP605	R 1	NPT 1	IDF15E1, IDU15E1					
IDF-AP606	NPT 1 1/2	Rc 1 1/2	IDF37E, IDU37E	55	31	54		
IDF-AP607	NPT 2	Rc 2	IDF55E, 75E, IDU55E, 75E	65	35	70		
IDF-AP609	R 3/8	NPT 3/8	IDF1E to 3E IDU3E	30	15	22		

Optional Accessories

Dimensions

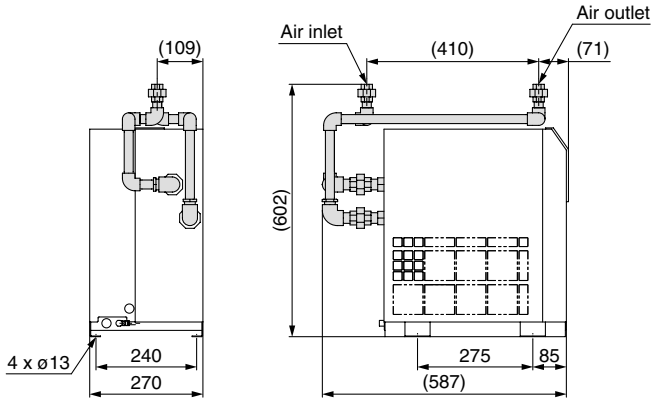
[Mounting base adapter]
IDF22E, 37E



Dimensions (mm)

Part no.	Applicable air dryer	Port size R	A	B	C	D	E	F	G	Single unit weight (kg)	Reference weight (including air dryer) (kg)
IDF-S0189	IDF22E	1	775	17	600	760	323	362	25	3	57
IDF-S0147	IDF37E	1 1/2	855	30	680	810	348	376	14	4	66

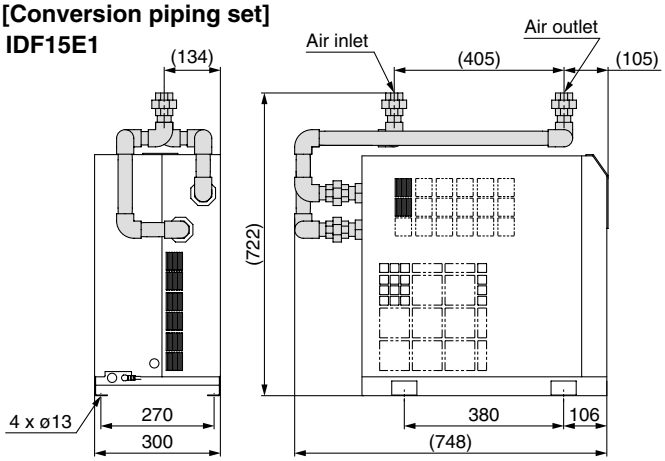
[Conversion piping set]
IDF6E



Port Size

Part no.	Applicable air dryer	Port size Rc	Weight (kg)
IDF-S0186	IDF6E	1/2	3.5

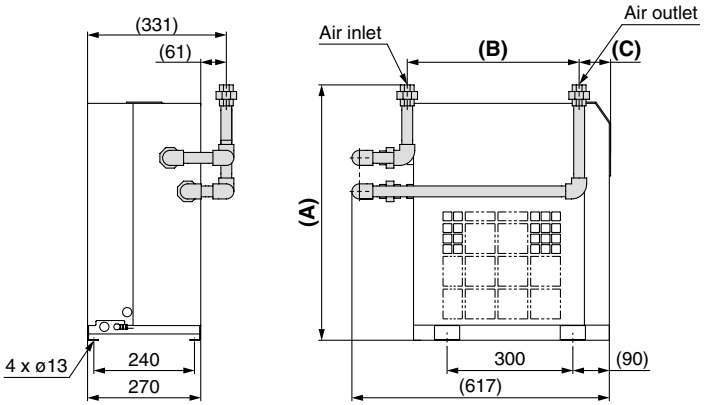
[Conversion piping set]
IDF15E1



Port Size

Part no.	Applicable air dryer	Port size Rc	Weight (kg)
IDF-S0188	IDF15E1	1	6.7

IDF8E, 11E

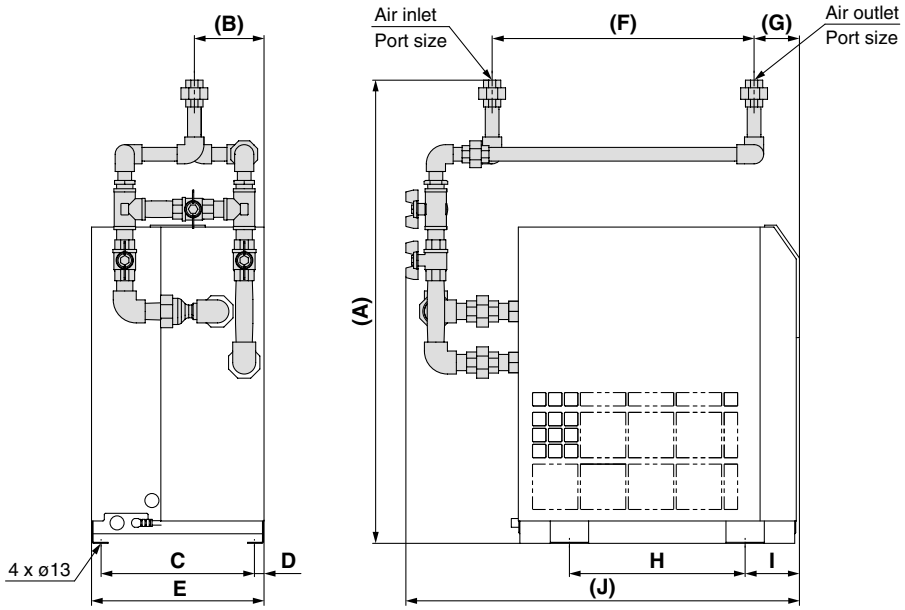


Dimensions (mm)

Part no.	Applicable air dryer	Port size Rc	A	B	C	Weight (kg)
IDF-S0203	IDF8E	3/4	609	410	75	3.8
IDF-S0187	IDF11E	3/4	669	405	89	4.0

Dimensions

[Conversion bypass piping set]
IDF6E to 15E1

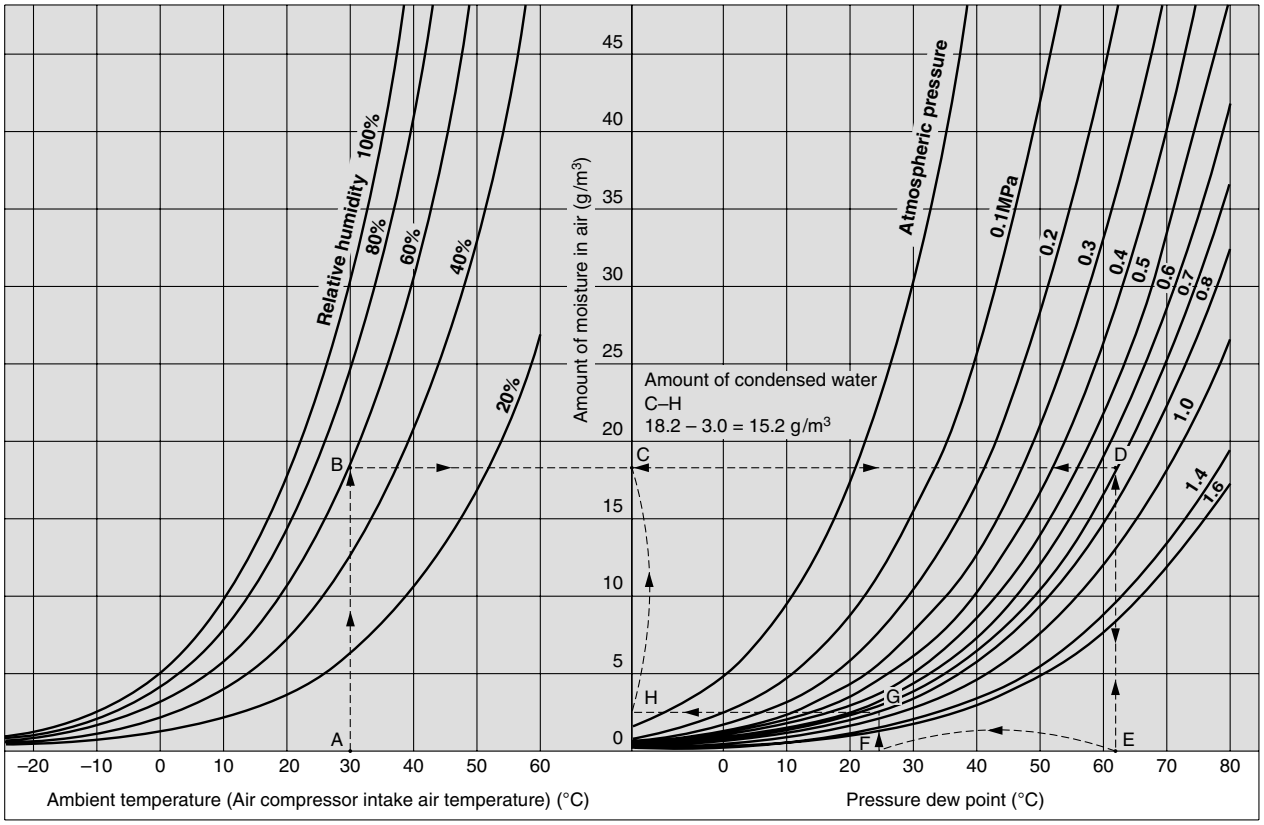


Dimensions (mm)

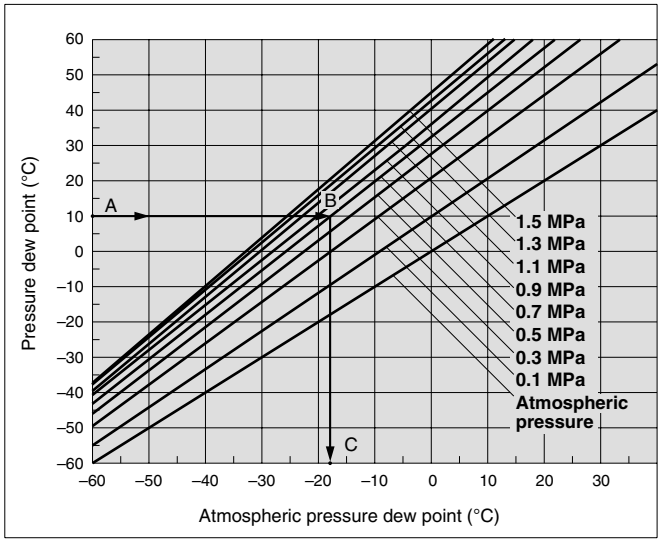
Part no.	Applicable air dryer	Port size Rc	A	B	C	D	E	F	G	H	I	J	Weight (kg)
IDF-S0183	IDF6E	1/2	725	109	240	15	270	410	71	275	85	616	5.6
IDF-S0202	IDF8E	3/4	749	111	240	15	270	410	75	300	90	646	6.1
IDF-S0184	IDF11E	3/4	815	138	240	15	270	405	89	300	90	653	6.3
IDF-S0185	IDF15E1	1	897	135	270	15	300	405	105	380	106	775	10.2

Data

Condensed Water Calculation



Dew Point Conversion Chart



<How to read the dew point conversion chart>

Example) To obtain the atmospheric pressure dew point at a pressure dew point 10°C and a pressure 0.7 MPa.

1. Trace the arrow mark → starting from the point A at a pressure dew point 10°C to obtain the intersection B on the pressure characteristic line for 0.7 MPa.
2. Trace the arrow mark → starting from the point B to obtain the intersection C at the dew point under atmospheric pressure.
3. The intersection C is the conversion value –17°C under atmospheric pressure dew point.

<How to calculate the amount of condensed water>

Example) To obtain the amount of condensed water when the pressure is applied to air up to 0.7 MPa with an air compressor, then cooled down to 25°C. Given an ambient temperature 30°C and a relative humidity 60%.

1. Trace the arrow mark from the point A at an ambient temperature 30°C to obtain the intersection B on the curved line for the relative humidity 60%.
2. Trace the arrow mark from the intersection B to obtain the intersection D on the pressure characteristic line for 0.7 MPa.
3. Trace the arrow mark from the intersection D to obtain the intersection E.
4. The intersection E is the dew point under pressure 0.7 MPa with an ambient temperature 30°C and a relative humidity 60%. The value for E is at 62°C.
5. Trace the intersection E upward, and trace from the intersection D leftward to obtain the intersection C.
6. The intersection C is the amount of moisture included in the compressed air 1 m³ at 0.7 MPa and a pressure dew point 62°C. The amount of moisture is 18.2 g/m³.
7. Trace the arrow mark, starting from F for cooling temperature 25°C (pressure dew point 25°C) to obtain the intersection G on the pressure characteristic line for 0.7 MPa.
8. From the intersection G, trace the arrow mark to obtain the intersection H on the vertical axis.
9. The intersection H is the amount of moisture included in the compressed air 1 m³ at 0.7 MPa and a pressure dew point 25°C. The amount of moisture is 3.0 g/m³.
10. Therefore, the amount of condensed water is as follows (per 1 m³):
    The amount of moisture at the intersection C
    – the amount of moisture at the intersection H
    = the amount of condensed water
    18.2 – 3.0 = 15.2 g/m³

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.*2)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

⚠ Safety Instructions	Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

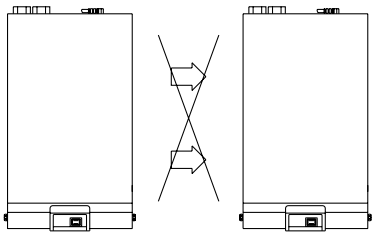
Series IDF/IDU
Specific Product Precautions 1

Be sure to read the below before handling. For Air Preparation Equipment Precautions, refer to "Handling Precautions for SMC Products" (M-E03-3).

Installation

⚠ Caution

- Avoid locations where the air dryer will be in direct contact with wind and rain. (Avoid locations where relative humidity is 85% or more.)
- Avoid exposure to direct sunlight.
- Avoid locations that contain much dust, corrosive gases, or flammable gases. Failure due to corrosion is not covered under warranty. However, when the risk of corrosion is high, select the option C (anti-corrosive treatment for copper tube).
- Avoid locations of poor ventilation and high temperature.
- Avoid locations where the air dryer is too close to a wall, etc. Leave a sufficient space between the air dryer and the wall according to the "Maintenance Space" in the operation manual.
- Avoid locations where the air dryer could draw in high temperature air discharged from an air compressor or other dryer.



Check that the exhaust air does not flow into the neighboring equipment.

- Avoid locations subjected to vibration.
- Avoid possible locations where the drain can freeze.
- Avoid locations with an ambient temperature 40°C or higher.
- Avoid installation on machines for transporting, such as vehicles, ships, etc.

Drain Tube

⚠ Caution

- A polyurethane tube is attached as a drain tube for the IDF1E to 75E, IDU3E to 75E. Use this tube to discharge drainage to a drain tank, etc.
- Do not use the drain tube in an upward direction. Do not bend or crush the drain tube. (Operation of the auto drain will stop water vapor from discharging through the air outlet.)
  If it is unavoidable that the tube goes upwards, make sure it only goes as far as the position of the auto drain.

Power Supply

⚠ Caution

<100 VAC>

- Insert the power supply plug to an exclusive 100 VAC power outlet.
- Install a circuit breaker Note 1) suitable to each model for the power supply.
- Maintain voltage fluctuation within ±10% of the rated voltage.
- Be sure to ground the power supply prior to use.
- Multiple-branch wiring is dangerous since it causes overheating.
- Do not extend the power cable by using a table tap, etc. A voltage drop may cause the air dryer to stop operating.

Note 1) Select a circuit breaker with a sensitivity current 30 mA and a rated current 10 A.

<200 VAC>

- Connect the power supply to the terminal block.
- Install a circuit breaker Note 2) suitable to each model for the power supply.
- Maintain voltage fluctuation within ±10% of the rated voltage.

Note 2) Select a circuit breaker with a sensitivity current 30 mA. As regards rated current, refer to "Applicable circuit breaker capacity" on pages 6, 10, 13, 16 and 19.

When the voltage used is different than specified for a standard product, use a separately installed power transformer. (page 26)

Series IDF/IDU
Specific Product Precautions 2

Be sure to read the below before handling. For Air Preparation Equipment Precautions, refer to "Handling Precautions for SMC Products" (M-E03-3).

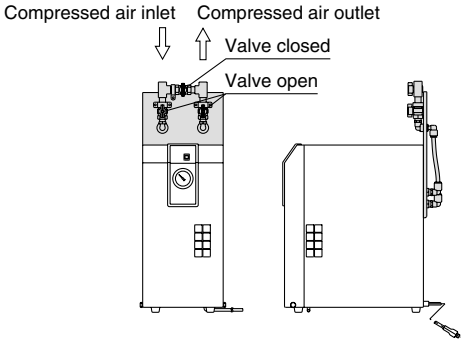
Air Piping

⚠ Caution

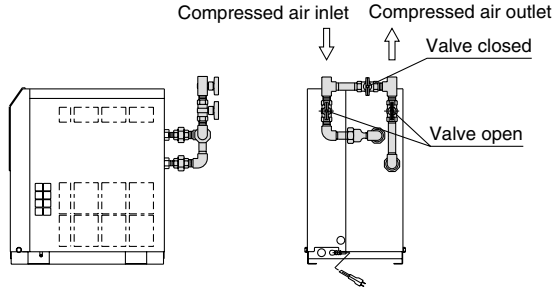
- Be careful to avoid an error in connecting the air piping at the compressed air inlet (IN) and outlet (OUT).
- Install bypass piping since it is needed for maintenance.

Use the bypass piping set on pages 33 and 34.

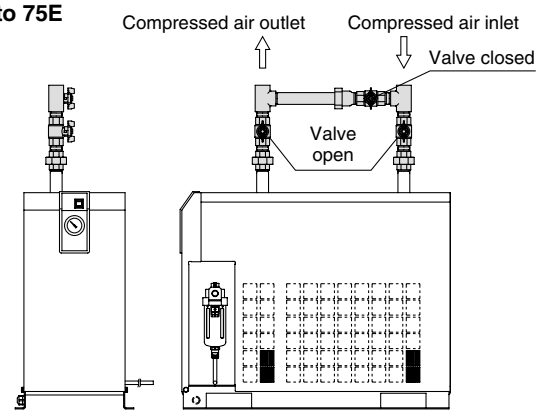
IDF1E to 3E



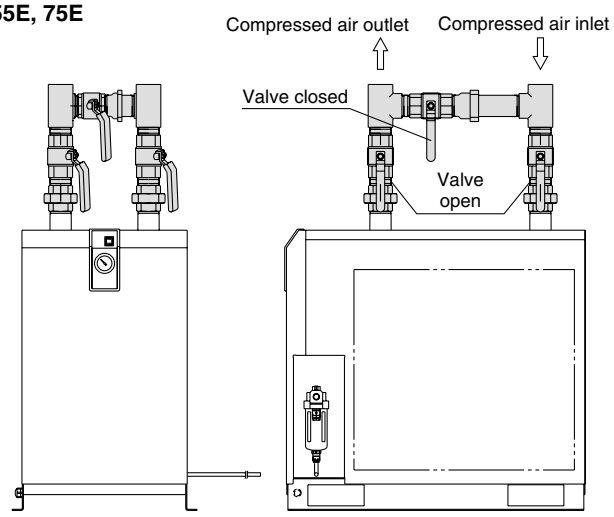
IDF4E to 15E1
IDU3E to 15E1



IDF22E, 37E
IDU22E to 75E



IDF55E, 75E



- When tightening the inlet/outlet air piping, firmly hold the hexagonal parts of the port on the air dryer side or piping with a wrench or adjustable angle wrench.
- Variations in operating conditions may cause condensation to form on the surface of the outlet piping. Apply thermal insulation around the piping to prevent condensation from forming.
- Check that vibrations resulting from the compressor are not transmitted through the air piping to the air dryer.
- Do not allow the weight of the piping to lie directly on the air dryer.

ⓐ Back page 3

Series IDF/IDU
Specific Product Precautions 3

Be sure to read the below before handling. For Air Preparation Equipment Precautions, refer to "Handling Precautions for SMC Products" (M-E03-3).

Protection Circuit

⚠ Caution

When the air dryer is operated in the following cases, which will activate the protection circuit and turn off the lamp, the air dryer will come to stop.

- The compressed air temperature is too high.
- The compressed air flow rate is too high.
- The ambient temperature is too high. (40°C or higher)
- The fluctuation of the power supply is beyond the rated voltage ±10%.
- The air dryer is drawing in high temperature air exhausted from an air compressor or other dryer.
- The ventilation port is obstructed by a wall or clogged with dust.

Compressor Air Delivery

⚠ Caution

Use an air compressor with an air delivery of 100 ℓ/min or larger for the IDF2E, 3E and the IDU3E, 4E.

Since the auto drain of the IDF2E to 75E, IDU3E to 15E1 is designed in such a way that the valve remains open unless the air pressure rises to 0.1 MPa or higher, air will blow out from the drain outlet at the time of air compressor start up until the pressure increases. Therefore, if an air compressor has a small air delivery, the pressure may not be sufficient.

Auto Drain

⚠ Caution

The auto drain may not function properly, depending on the quality of the compressed air. Check the operation once a day.

Cleaning of Ventilation Area

⚠ Caution

Remove dust from the ventilation area once a month using a vacuum cleaner or an air blow nozzle.

Time Delay for Restarting

⚠ Caution

Allow at least three minutes before restarting the air dryer. Otherwise, the protection circuit will activate, the lamp will be turned off and the air dryer will not start up.

Modifying the Standard Specifications

⚠ Caution

Do not modify the standard product using any of the optional specifications once the product has been supplied to a customer. Check the specifications carefully before selecting an air dryer.

Air Dryers Compliant to Overseas Standards

Refrigerated Air Dryer *Series IDFA□E*

For Use in Europe, Asia and Oceania

CE

EC Directive compliant (with CE marking)

Power supply voltage:
Single-phase 230 VAC (50 Hz)

Refrigerant: R134a (HFC)
R407C (HFC)
Zero ozone depletion potential

Improved corrosion resistance with the stainless steel heat exchanger
［IDFA4E to 75E］

Model	Air flow capacity (m^3/h) [ANR] Outlet air pressure dew point Note)			Refrigerant	Rated inlet condition	Port size
	3°C	7°C	10°C			
IDFA3E	12	15	17	R134a (HFC)	35°C, 0.7 MPa	Rc 3/8
IDFA4E	24	31	34			Rc 1/2
IDFA6E	36	46	50			Rc 3/4
IDFA8E	65	83	91			
IDFA11E	80	101	112			
IDFA15E	120	152	168			Rc 1
IDFA22E	182	231	254	R407C (HFC)		R 1
IDFA37E	273	347	382			R 1 1/2
IDFA55E	390	432	510			R 2
IDFA75E	660	720	822			

Note) Air flow capacity for each dew point is indicated.

Refrigerated Air Dryer *Series IDFB□E*

For Use in North, Central & South America

c UL us LISTED

UL certified

Power supply voltage:
Single-phase 115 VAC (60 Hz)
230 VAC (60 Hz)
Three-phase 460 VAC (60 Hz)

Refrigerant: R134a (HFC)
Zero ozone depletion potential

Improved corrosion resistance with the stainless steel heat exchanger
［IDFB4E to 75E］

Model	Air flow capacity SCFM (m^3/h) [ANR] Outlet air pressure dew point Note)			Refrigerant	Rated inlet condition	Port size
	37°F (2.8°C)	45°F (7.2°C)	50°F (10°C)			
IDFB3E	10 (17)	11 (19)	12 (20)	R134a (HFC)	100°F (37.8°C) 100 psi (0.7 MPa)	NPT 3/8
IDFB4E	15 (25)	16 (27)	17 (28)			NPT 1/2
IDFB6E	25 (43)	26 (45)	28 (47)			NPT 3/4
IDFB8E	41 (70)	43 (74)	45 (77)			
IDFB11E	59 (100)	62 (106)	65 (110)			
IDFB15E	71 (120)	80 (136)	86 (147)			NPT 1
IDFB22E	107 (182)	120 (205)	130 (221)			
IDFB37E	161 (273)	173 (294)	181 (308)			NPT 1 1/2
IDFB55E	226 (384)	258 (438)	297 (504)	R407C (HFC)		NPT 2
IDFB75E	300 (510)	353 (600)	406 (690)			

Note) Air flow capacity for each dew point is indicated.

∗ Refer to the separate catalog for dryer models conforming with foreign standards (CE and UL).

Related Products

Membrane Air Dryer *Series IDG*

(For use in cases where a power supply is not provided)

Dew point indicator for checking air drying condition at a glance
［Except IDG1］
(The IDG3, IDG5, IDG3H, IDG5H are semi-standard.)

- **Compact**
- **Lightweight**
- **Space-saving**

Fitting for discharging purge air available
Purge air can be discharged away with a tube if it should not be discharged around the membrane air dryer (semi-standard).

Discharged air noise reduced with built-in silencer
［Except IDG1, IDG3, IDG3H, IDG5, IDG5H, IDG30, IDG30H, IDG30L, IDG50, IDG50H, IDG50L］

No need for power supply
Power supply is not necessary at all. Saves time and effort of wiring, and no need to consider electrical standards.

No vibration nor heat discharge
No mechanically moving parts such as refrigerator

Suitable for a low dew point
Outlet air atmospheric pressure dew point: –40˚C
［IDG30L, IDG50L, IDG60L, IDG75L, IDG100L］
Outlet air atmospheric pressure dew point: –60˚C
［IDG60S, IDG75S, IDG100S］

Outlet air flow rate 10 to 1000 ℓ/min (ANR)

Heatless Air Dryer *Series ID*

(For use in cases where a low dew point is necessary)

Heatless type ID series is ideal for applications that require dry air with low dew point.

Supplies dry air with low dew point of –30°C or less.

Small and light without heater and electric control panel

Possible to check outlet dew point with indicator
(Self-regenerative style allows easy maintenance.)

Outlet air flow rate 80 to 780 ℓ/min (ANR)

Revision history

Edition B	* Addition of Refrigerated Air Dryers, IDF15E/22E/37E, IDU8E/11E/15E. * Deletion of Option H: Moderate Pressure Specification (Auto drain bowl: Metal bowl). * Addition of Compressor Intake Condition to Air Flow Capacity in the standard specifications. * Number of pages from 20 to 24.	JZ
Edition C	* Addition of Refrigerated Air Dryers, IDF55E/75E. * Addition of Piping Adapter to Optional Accessories. * Number of pages from 24 to 32.	KV
Edition D	* Addition of Refrigerated Air Dryers, IDF120D to 240D, IDF370B. * Addition of Refrigerated Air Dryers, IDU22E/37E, IDU55C/75C. * Number of pages from 32 to 44.	LS
Edition E	* Addition of Refrigerated Air Dryers, IDU55E/75E. * Deletion of Refrigerated Air Dryers, IDU55C/75C. * Number of pages from 44 to 52.	MR
Edition F	* Change to Quick Reference Guide to Air Preparation Equipment. * Number of pages from 52 to 48.	OT

⚠ Safety Instructions | Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

SMC Corporation

Akihabara UDX 15F,
4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN
Phone: 03-5207-8249 Fax: 03-5298-5362
URL http://www.smcworld.com

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D-DN

1st printing IU printing OT 7150SZ Printed in Japan.